

Table 2. Reservoir Storage Data (through 0000 hrs 6/21/11)

Reservoir	Current	Total	Remaining	Exclusive	% Excl Left
	kAF	kAF	kAF	kAF	
Fort Peck	18,938	18,463	-475	971	-49
Garrison	23,867	23,821	-46	1,489	-3
Oahe	22,690	23,137	447	1,102	41
Big Bend	1,614	1,798	184	60	100
Fort Randall	4,554	5,418	864	985	88
Gavins Point	381	450	69	57	100

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Fort Peck have been reduced as inflows continue to decline. The other reservoir releases are currently being maintained at their anticipated maximum releases. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/21/11)

Reservoir	Yesterday	Forecast Today	7 days out	14 days out	Pre-2011 Record
	kcfs	kcfs	kcfs	kcfs	kcfs
Fort Peck	61.8	60	60	60	35
Garrison	150.2	150	150	150	65
Oahe	160.3	160	160	160	59
Big Bend	158.9	160	160	160	74
Fort Randall	143.5	143	148	148	67
Gavins Point	150.0	150	150	150	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/21/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.8	20.6	mid-Jun
Pierre, SD	13	19.8	18.7	mid-Jun
Sioux City, IA	30	34.0	35-37	mid-Jun thru July
Decatur, NE	35	38.6	40-42	mid-Jun thru July
Omaha, NE	29	34.4	34-36	mid-Jun thru July
Nebraska City, NE	18	26.8	27-28+	mid-Jun thru July
St. Joseph, MO	17	24.6	27-32	mid-Jun thru July
Kansas City, MO	32	26.4	30-39	mid-Jun thru July
Waverly, MO	20	24.8	27-31	mid-Jun thru July
Boonville, MO	21	22.1	27-33	mid-Jun thru July
Hermann, MO	21	21.6	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still below the constructed levee crests.

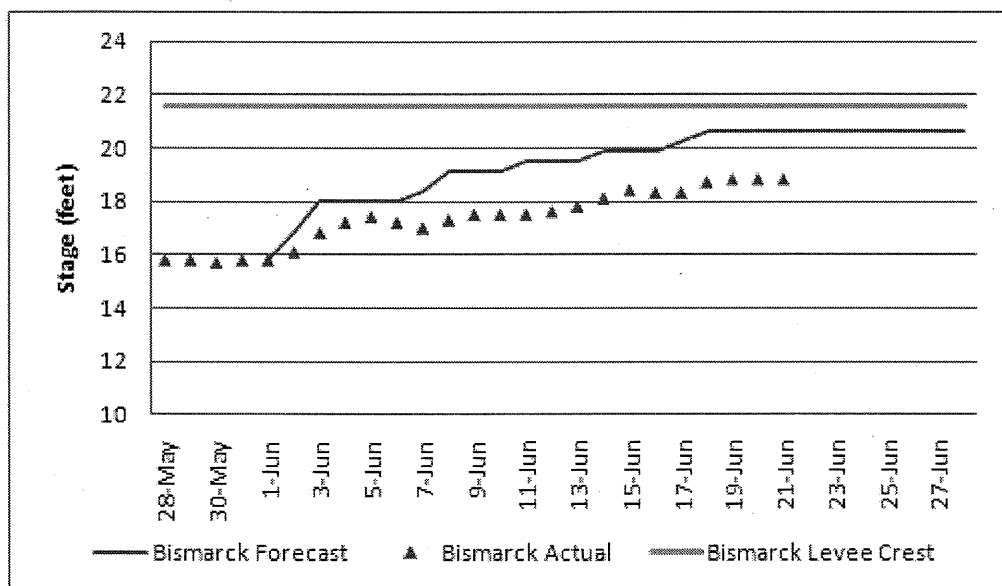


Figure 1. Missouri River stages at Bismarck, North Dakota.

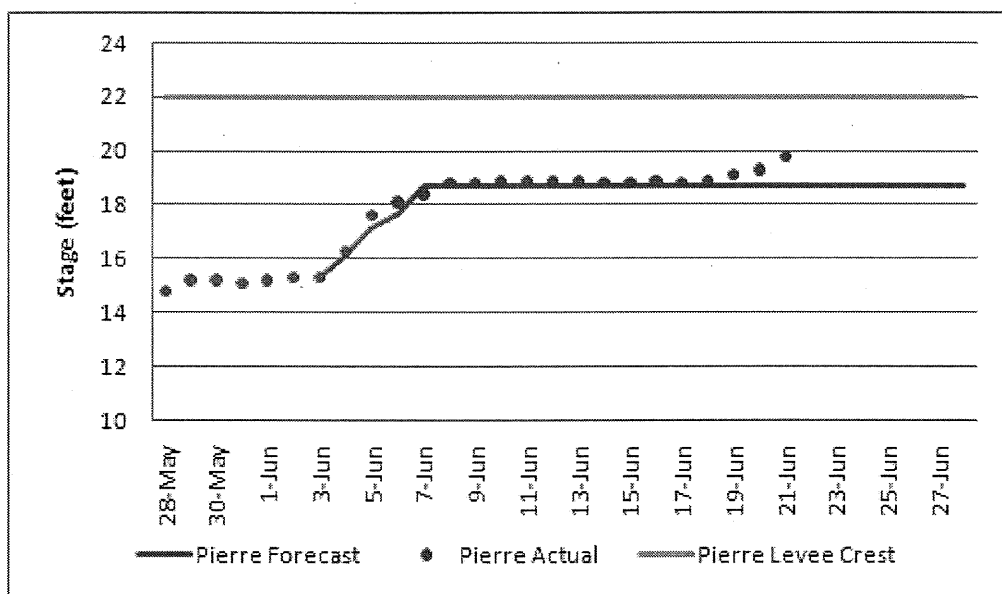


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast was prepared on June 20; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 20 mountain snowpack updated by the Corps.

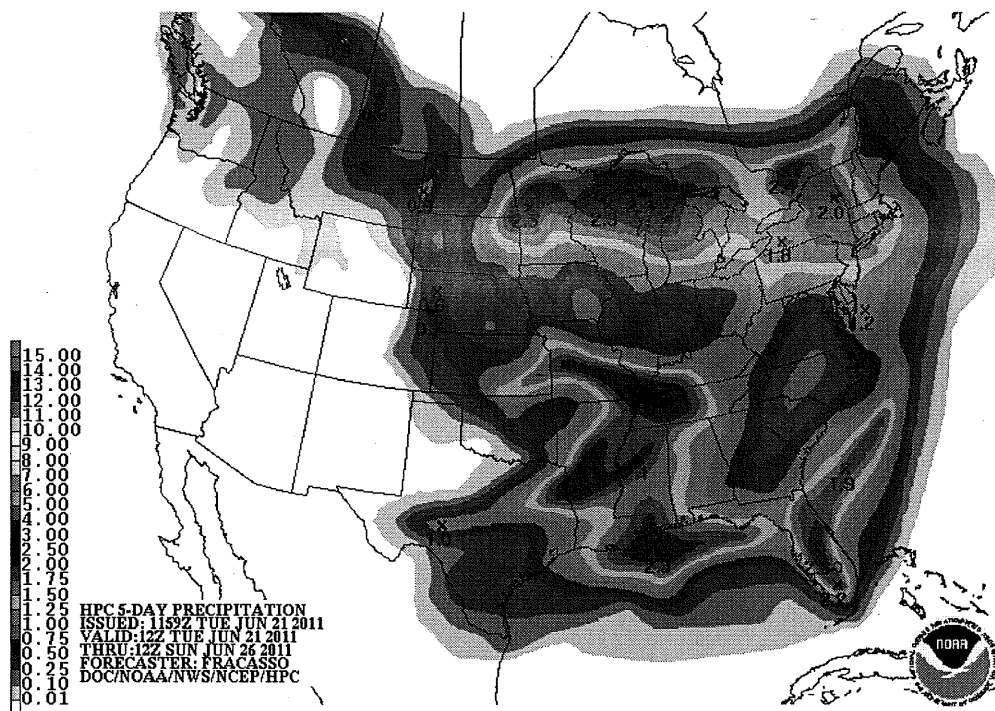


Figure 3. 5-day total QPF ending 0700 Sunday, June 26, 2011.

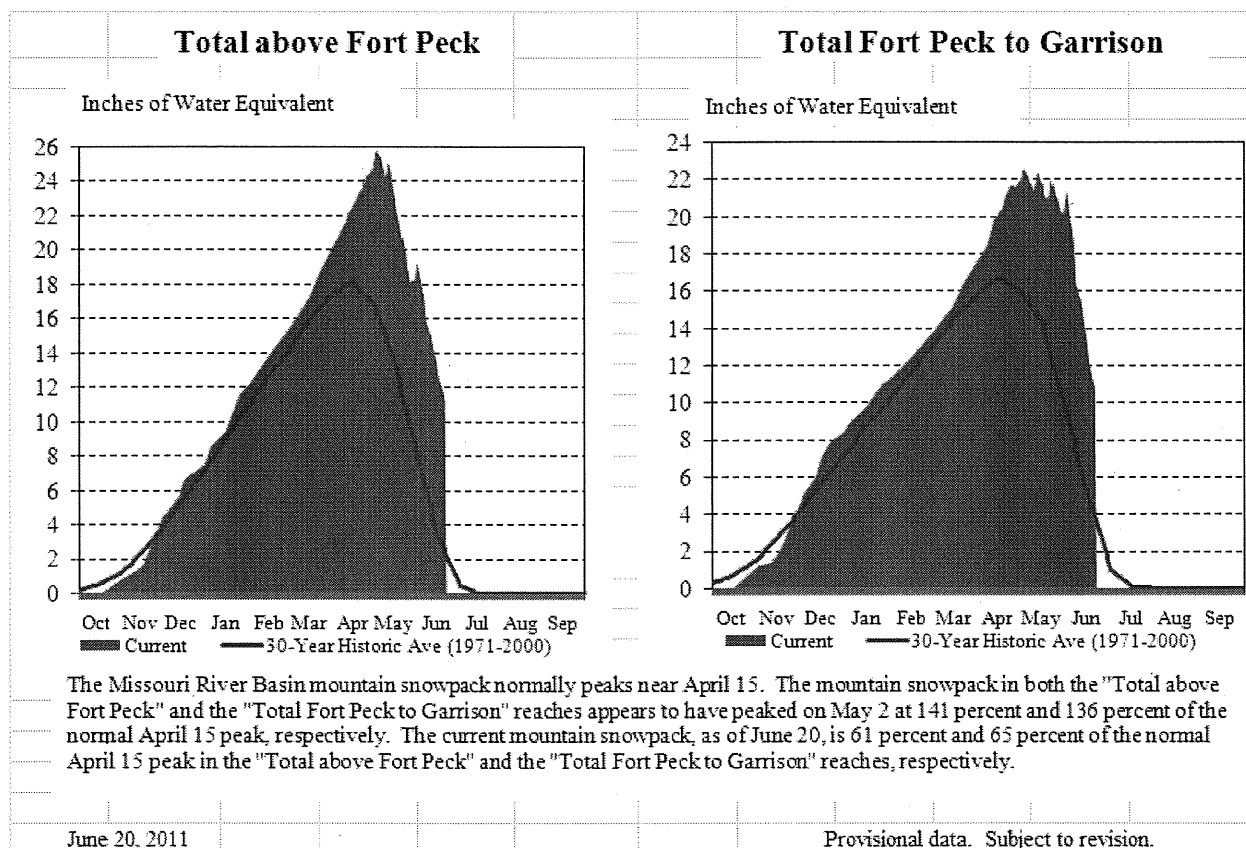


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 20, 2011.

Current Actions and Notable Information

Levee construction been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

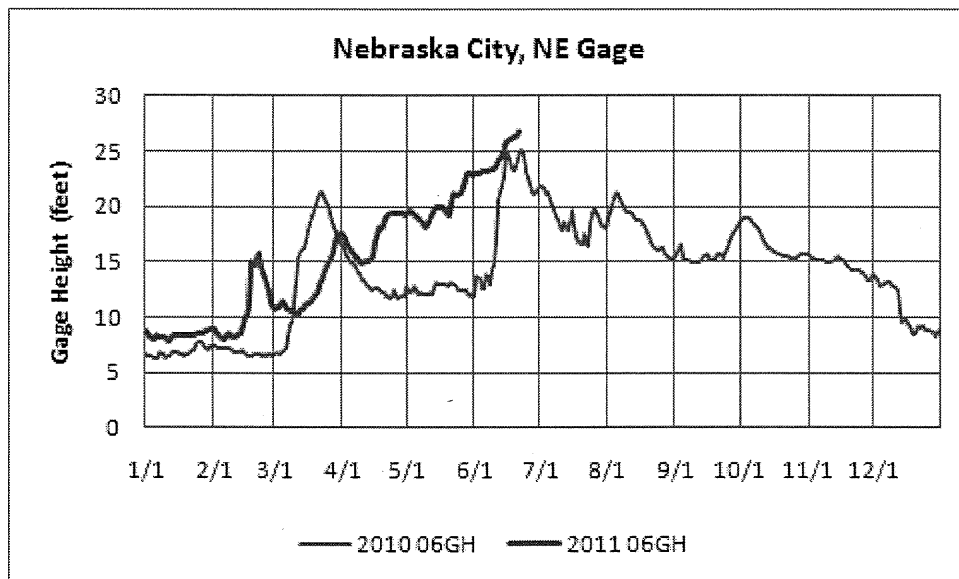


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

June 19, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

Additionally, levee R-548, located south of Brownsville in Nemaha County, Nebraska overtopped on June 19.

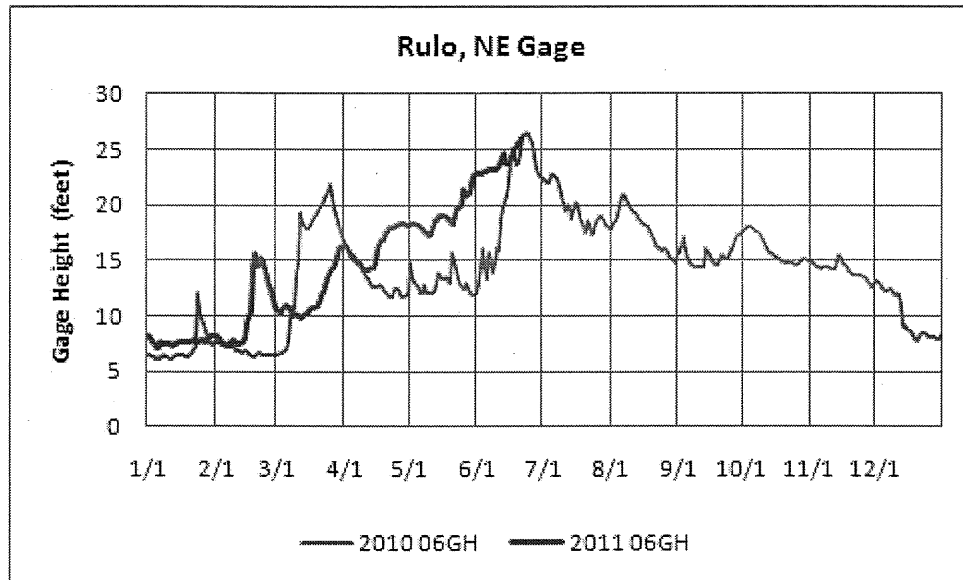


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Moderate rains fell over South Dakota, Nebraska, and Kansas between 0700 hours yesterday and today although lighter rains fell in Montana, Wyoming, and North Dakota. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/21/2011 1200 UTC- Created 6/21/11 15:41 UTC

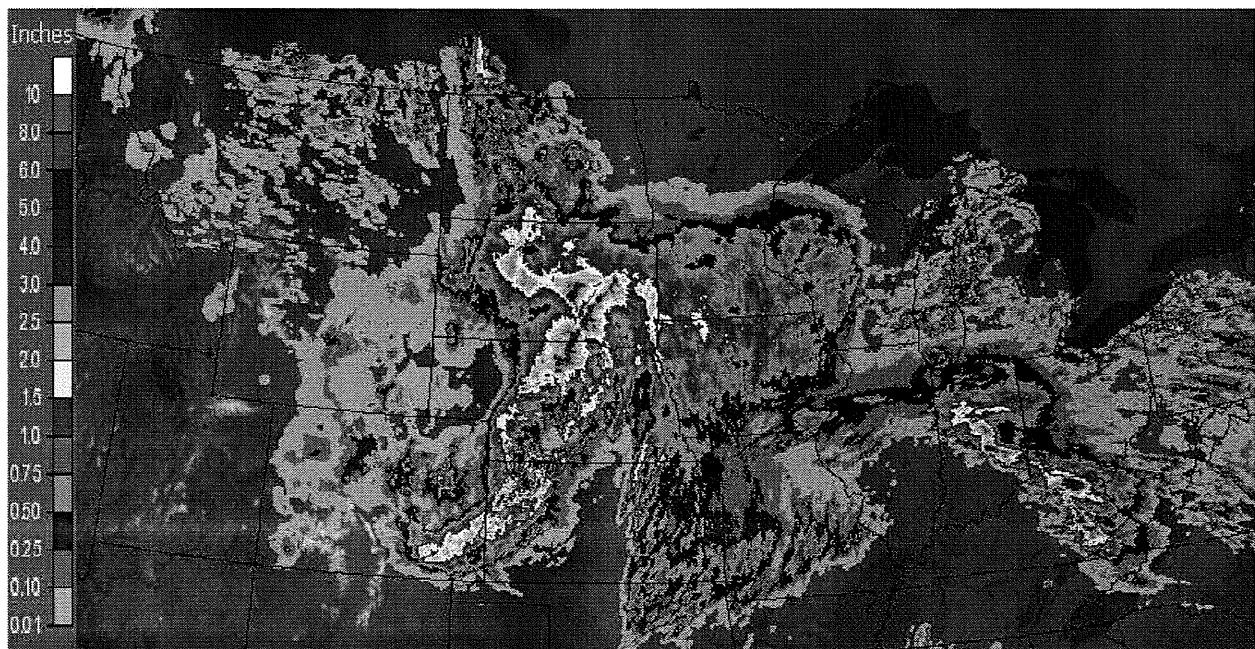


Figure 7. Rainfall on the Central Region of the United States for June 20, 2011.

[REDACTED] NWO

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 12:43 PM
To: Farhat, Jody S NWD02
Cc: [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD
Subject: RE: Today's 1530 CT call (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Jody,

Roger. The RCO will set up as the host. Understood the call will be at 1530 CST (1330 PST).

[REDACTED]
-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 10:39 AM
To: [REDACTED] NWD; Tipton, Robert A Col NWD
Cc: Ruch, Robert J COL NWO; [REDACTED] NWD; Hofmann, Anthony J COL NWK; Anderson, G Witt NWD; Blechinger, Erik T NWO
Subject: Today's 1530 CT call (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sirs,

I had already sent out a call-in number, but let's forget that and use the same number at the Exec CMT call.

To be clear: The call is at 1530, not 1500, and we'll use the exec CMT call-in number.

VR,
Jody

-----Original Message-----

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 12:10 PM
To: Tipton, Robert A Col NWD
Cc: Ruch, Robert J COL NWO; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] NWD; Farhat, Jody S NWD02; Anderson, G Witt NWD
Subject: RE: 1630 CST/1430 PST meeting (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED

Caveats: NONE

Sir,

Roger. Just so I'm clear, no 1430 PST (1630 CST) Exec call today. Will make those "as needed." Instead there will be a 1300 PST (1500 CST) call with focus on inflows and release schedules. We can use the same call-in number as the Exec call (assuming Jody hasn't sent one out yet) to reduce any confusion.

VR
John

-----Original Message-----

From: Tipton, Robert A Col NWD

Sent: Tuesday, June 21, 2011 9:26 AM

To: Anderson, G Witt NWD; [REDACTED] NWD

Cc: Ruch, Robert J COL NWO; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED]
NWD

Subject: RE: 1630 CST/1430 PST meeting

Roger,

[REDACTED] Please send out a notice that these will now be on an on-call basis.

Witt/[REDACTED]: We just need to make sure when we do decide to have a call that we run the time through the RCO so that they can get the information out to the participants. For example, the call with the commanders below should include us and the RCO chief so that we have SA on this.

Bob

Robert A. Tipton, P.E.

COL, EN

Deputy Commander

Northwestern Division

U.S. Army Corps of Engineers

503-808-3701

-----Original Message-----

From: Anderson, G Witt NWD

Sent: Tuesday, June 21, 2011 8:13 AM

To: Tipton, Robert A Col NWD; Hofmann, Anthony J COL NWK

Cc: Ruch, Robert J COL NWO

Subject: Re: 1630 CST/1430 PST meeting

Just discussed with Boss. He is good with doing these on an as needed basis. For example, we talked with Jody about inflows and desired release sched. Boss asked her to set up call with Cmdrs at 1500 central today to discuss. He plans for heads up calls to be made to key officials before we go public with increase release (if we do that). Also wants to hear from Bob and Tony on impacts of going to 160 at lower three.

We will be in meetings until 1400 eastern.

Witt

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Tipton, Robert A Col NWD

To: Hofmann, Anthony J COL NWK; Anderson, G Witt NWD

Cc: Ruch, Robert J COL NWO

Sent: Tue Jun 21 06:24:53 2011

Subject: Re: 1630 CST/1430 PST meeting

Tony,

Will pass on to the CG. I think we may be at a point where we make a call during the day whether we do it or not as I agree that some days it is not of much value like yesterday.

You have to remember that the purpose is to synch the Division leasershship team and the stakeholder's call is not the place to do that. There have been days just this past week where the CG had some points he wanted to hit just amongst the leadership team and this was while he was actually on the ground.

As he we will be in D.C., Portland and Canada over the next couple of weeks - I think he will most likely want to have this placeholder to discuss things as a senior group -especially if a critical event occurs.

Having said all of this, concur - that we may be reaching a point where these may not be needed every day.

Witt - your thoughts? As you will be with the CG today, perhaps you could run this by him..

Bob

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Hofmann, Anthony J COL NWK

To: Tipton, Robert A Col NWD; Anderson, G Witt NWD

Cc: Ruch, Robert J COL NWO

Sent: Tue Jun 21 05:34:03 2011

Subject: 1630 CST/1430 PST meeting

Witt and Bob-

Highly recommend stop doing the 1630 CST meeting. In my eyes, it is not productive anymore and simply reiterates what we already brief at the 1700 CST CODEL call.

Wasting valuable staff time now.

Tony

Building Strong!

Colonel Anthony J. Hofmann, PMP
Commander, Kansas City District
U.S. Army Corps of Engineers

Office: (816) 389-3202

Fax: (816) 389-2027

<http://www.nwk.usace.army.mil/>

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: Williamson, Eileen L NWO
Sent: Tuesday, June 21, 2011 12:35 PM
To: [REDACTED] NWO; [REDACTED] NWD02
Cc: Farhat, Jody S NWD02
Subject: RE: changes to Riverwatch storyboard (UNCLASSIFIED)
Attachments: Flood_Fight_Storyboard_21JUN.DOCX

Classification: UNCLASSIFIED
Caveats: NONE

Has Jody reviewed these changes?
I am concerned about the exclusive flood control pool message for Fort Randall and Oahe and want to be sure Jody is aware and vetting. - We didn't use this in the Riverwatch at Garrison or Fort Peck.

-----Original Message-----

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 12:27 PM
To: [REDACTED] NWD02
Cc: Williamson, Eileen L NWO
Subject: changes to Riverwatch storyboard (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Rose & Eileen,

Please review the attached storyboard - particularly the wording under the scheduled releases.

Thanks,

[REDACTED]
[REDACTED]
Outreach Specialist
Planning Branch
Corps of Engineers, Omaha District
1616 Capitol Avenue
Omaha, NE 68102
[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE



Missouri River Mainstem Reservoir Bulletin (Updated 21 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2251.9 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow 50,000 cfs (20 Jun) 51,000 cfs (19 Jun) Daily Avg. Release 61,800 cfs (20 Jun) 65,500 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been decreased to 60,000 cfs. - Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1854.2 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 188,000 cfs (20 Jun) 165,000 cfs (19 Jun) Daily Avg. Release 150,200 cfs (20 Jun) 150,200 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates 1854 ft msl River Stage (Bismarck) 18.85 (0815 CDT 21 Jun) - Flood stage – 16 ft 18.81 (0715 CDT 20 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control pool. - Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1618.9 ft msl 24-hr Change (+0.3 ft) Daily Avg. Inflow 201,000 cfs (20 Jun) 153,000 cfs (19 Jun) Daily Avg. Release 160,300 cfs (20 Jun) 158,700 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates 1620 ft msl River Stage (Pierre) 19.81 (0730 CDT 21 Jun) - Flood stage – 15 ft 19.33 (0730 CDT 20 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 160,000 cfs. - Reservoir is currently in the exclusive flood control pool. - Reservoir will peak within a foot of the top of the spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1419.9 ft msl 24-hr Change (+0.5 ft) Daily Avg. Inflow 172,000 cfs (20 Jun) 156,000 cfs (19 Jun) Daily Avg. Release 158,900 cfs (20 Jun) 158,800 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 160,000 cfs. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1366.3 ft msl 24-hr Change (+1.2 ft) Daily Avg. Inflow 200,000 cfs (20 Jun) 171,000 cfs (19 Jun) Daily Avg. Release 143,500 cfs (20 Jun) 143,600 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 148,000 cfs by mid to late June. - Reservoir is currently in the exclusive flood control pool. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 148,000 cfs (Mid to late June)	Midnight Elevation 1207.5 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow 150,000 cfs (20 Jun) 148,000 cfs (19 Jun) Daily Avg. Release 150,000 cfs (20 Jun) 150,000 cfs (19 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 150,000 cfs (Mid June)



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Isolated showers and t-storms after noon. Patchy fog before 9am otherwise, mostly sunny, high near 77. Calm wind becoming west northwest 6 to 9 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 55. North wind 6 to 10 mph. Wednesday: Mostly sunny, with high near 79. East wind 6 to 8 mph becoming south. 24-hr forecast (Williston, ND) Today: Showers likely, with t-storms possible after 1pm. Mostly cloudy, high near 68. East wind around 8 mph. Chance of precipitation is 60%. New rainfall amounts between 0.1 to 0.25 inch, higher amounts possible in t-storms. Tonight: 20% chance of showers and t-storms before 1am. Mostly cloudy, low around 55. East wind 6 to 9 mph becoming calm. Wednesday: Partly sunny, high near 75. North wind 3 to 9 mph.	24-hr forecast (Riverdale, ND) Today: Showers likely, mainly before 1pm. Cloudy, high near 66. North wind 9 to 11 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 to 0.25 inch possible. Tonight: 20% chance of showers. Cloudy, low around 55. North wind 7 to 11 mph. Wednesday: 30% chance of showers. Cloudy, high near 70. North wind 7 to 14 mph, with gusts as high as 20 mph. 24-hr forecast (Washburn, ND) Today: Showers likely. Cloudy, high near 65. North wind 10 to 14 mph, gusts as high as 20 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible. Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 8 to 11 mph. Wednesday: 30% chance of showers. Cloudy, high near 69. North wind 8 to 17 mph, gusts as high as 24 mph.	24-hr forecast (Pierre, SD) Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%. Tonight: 30% chance of showers and t-storms, mainly before 1am. Mostly cloudy, low around 54. North northwest wind 18 to 25 mph, with gusts as high as 36 mph. Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph, with gusts as high as 30 mph. 24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms. High near 64. North northwest wind 25 to 28 mph, with gusts as high as 39 mph. Chance of precipitation is 100%. Tonight: 30% chance of showers and t-storms before 1am. Mostly cloudy, low around 54. North northwest wind 17 to 25 mph, with gusts as high as 36 mph. Wednesday: Partly sunny, high near 72. North northwest wind 18 to 21 mph.	24-hr forecast (Lower Brule, SD) Today: Showers and t-storms. High near 63. North northwest wind 24 to 28 mph, with gusts as high as 38 mph. Chance of precipitation is 100%. Tonight: 40% chance of showers and t-storms, mainly before 1am. Cloudy, low around 56. North northwest wind 20 to 26 mph, with gusts as high as 38 mph. Wednesday: Partly sunny, high near 71. North northwest wind 18 to 24 mph, with gusts as high as 33 mph.	24-hr forecast (Chamberlain, SD) Today: Occasional showers, t-storms possible after 10am. Some storms could produce heavy rain. High near 61. North northwest wind 21 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 100%. New rainfall amounts 0.25 to 0.5 inch possible. Tonight: Chance of showers and t-storms, mainly before 1am. Cloudy, low around 57. North northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 40%. Wednesday: Slight chance of showers and t-storms before 1pm. Partly sunny, high near 70. Northwest wind 18 to 24 mph, with gusts as high as 33 mph. Chance of precipitation is 20%.	24-hr forecast (Yankton, SD) Today: Showers likely, then after 10am. Some storms could produce heavy rain. High near 66. North northwest wind 10 to 13 mph increasing to 18 to 21 mph. Winds could gust as high as 30 mph. Chance of precipitation is 90%. New rainfall amounts 0.25 to 0.5 inch possible. Tonight: Chance of showers and t-storms before and after 1am. Low around 58. Northwest wind 22 to 26 mph, with gusts as high as 36 mph. Chance of precipitation is 80%. New rainfall amounts 0.1 inch, higher amounts possible in t-storms. Wednesday: Chance of showers and t-storms. Cloudy, high near 67. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 50%. 24-hr forecast (Sioux City, IA) Today: Showers likely, then after 10am. Some storms could produce heavy rain. High near 69. Southeast wind 9 to 14 mph becoming west. Chance of precipitation is 80%. New rainfall amounts 0.25 to 0.5 inch possible. Tonight: Showers likely and a possible t-storm. Cloudy, low around 59. West northwest wind around 17 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in t-storms.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 21 Jun; 0900 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: Showers likely. Cloudy, high near 64. North wind 14 to 16 mph, with gusts as high as 23 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch possible. Tonight: 30% chance of showers, mainly before 1am. Cloudy, low around 56. North wind 10 to 14 mph, with gusts as high as 20 mph. Wednesday: 30% chance of showers. Cloudy, high near 70. Breezy, with a north wind 9 to 12 mph increasing to 17 to 20 mph. Winds could gust as high as 28 mph.				Wednesday: Chance of showers and t-storms. Cloudy, high near 65. Northwest wind 16 to 22 mph, with gusts as high as 30 mph. Chance of precipitation is 50%. 24-hr forecast (Omaha, NE) Today: Chance of showers and t-storms, then showers likely and a possible t-storm after 1pm. Cloudy, high near 73. West southwest wind 10 to 18 mph, with gusts as high as 26 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 to 0.25 inch, higher amounts possible in thunderstorms. Tonight: Chance of showers, mainly before 1am. Cloudy, low around 60. West northwest wind 15 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 30%. New rainfall amounts 0.1 inch possible. Wednesday: 30% chance of showers, mainly before 1pm. Cloudy, high near 71. Northwest wind 15 to 21 mph, with gusts as high as 30 mph. New rainfall amounts 0.1 inch possible.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>



Missouri River Flooding (Logistics) (Updated 21 Jun; 0900 CDT)

Personnel Deployed	
7 (Glasgow, MT)	5 (Pierre, SD)
1 (Garrison, ND)	1 (Kansas City, MO)
4 (Bismarck, ND)	3 (Sioux City, IA)
1 (Fort Yates, ND)	1 (S. Sioux City, NE)
6 (Williston, ND)	1 (Onawa, IA)
	16 (Missouri River Survey – 7 teams)
	1 (Lincoln, NE)
	1 (Offutt, NE)
	5 (Hamburg, IA)

Equipment Deployed	
HESCO (3' and 4') Issued: 74,270 LF On Hand: 30,950 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,225 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' x 500')
Pumps Issued: 48 pumps On Hand: 5 pumps (4 – serviceable) Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 pump waiting on PTO shaft HESCO: 4,750 LF

[REDACTED] NWO

From: Tipton, Robert A Col NWD
Sent: Tuesday, June 21, 2011 12:20 PM
To: [REDACTED] NWD
Cc: Ruch, Robert J COL NWO; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] NWD; Farhat, Jody S NWD02; Anderson, G Witt NWD
Subject: RE: 1630 CST/1430 PST meeting (UNCLASSIFIED)

Roger on the 1430 call.

Get with Jody on the 1500 CST call to confirm - then send out the call in numbers.

Robert A. Tipton, P.E.
COL, EN
Deputy Commander
Northwestern Division
U.S. Army Corps of Engineers

503-808-3701

-----Original Message-----

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 10:10 AM
To: Tipton, Robert A Col NWD
Cc: Ruch, Robert J COL NWO; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] NWD; Farhat, Jody S NWD02; Anderson, G Witt NWD
Subject: RE: 1630 CST/1430 PST meeting (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

Roger. Just so I'm clear, no 1430 PST (1630 CST) Exec call today. Will make those "as needed." Instead there will be a 1300 PST (1500 CST) call with focus on inflows and release schedules. We can use the same call-in number as the Exec call (assuming Jody hasn't sent one out yet) to reduce any confusion.

VR
[REDACTED]

-----Original Message-----

From: Tipton, Robert A Col NWD
Sent: Tuesday, June 21, 2011 9:26 AM
To: Anderson, G Witt NWD; [REDACTED] NWD
Cc: Ruch, Robert J COL NWO; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] NWD
Subject: RE: 1630 CST/1430 PST meeting

Roger,

[REDACTED] Please send out a notice that these will now be on an on-call basis.

Witt/ [REDACTED]: We just need to make sure when we do decide to have a call that we run the time through the RCO so that they can get the information out to the participants. For example, the call with the commanders below should include us and the RCO chief so that we have SA on this.

Bob

Robert A. Tipton, P.E.
COL, EN
Deputy Commander
Northwestern Division
U.S. Army Corps of Engineers

503-808-3701

-----Original Message-----

From: Anderson, G Witt NWD
Sent: Tuesday, June 21, 2011 8:13 AM
To: Tipton, Robert A Col NWD; Hofmann, Anthony J COL NWK
Cc: Ruch, Robert J COL NWO
Subject: Re: 1630 CST/1430 PST meeting

Just discussed with Boss. He is good with doing these on an as needed basis. For example, we talked with Jody about inflows and desired release sched. Boss asked her to set up call with Cmdrs at 1500 central today to discuss. He plans for heads up calls to be made to key officials before we go public with increase release (if we do that). Also wants to hear from Bob and Tony on impacts of going to 160 at lower three.

We will be in meetings until 1400 eastern.

Witt

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Tipton, Robert A Col NWD
To: Hofmann, Anthony J COL NWK; Anderson, G Witt NWD
Cc: Ruch, Robert J COL NWO
Sent: Tue Jun 21 06:24:53 2011
Subject: Re: 1630 CST/1430 PST meeting

Tony,

Will pass on to the CG. I think we may be at a point where we make a call during the day whether we do it or not as I agree that some days it is not of much value like yesterday.

You have to remember that the purpose is to synch the Division leasership team and the stakeholder's call is not the place to do that. There have been days just this past week where the CG had some points he wanted to hit just amongst the leadership team and this was while he was actually on the ground.

As he we will be in D.C., Portland and Canada over the next couple of weeks - I think he will most likely want to have this placeholder to discuss things as a senior group -especially if a critical event occurs.

Having said all of this, concur - that we may be reaching a point where these may not be needed every day.

Witt - your thoughts? As you will be with the CG today, perhaps you could run this by him..

Bob

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Hofmann, Anthony J COL NWK
To: Tipton, Robert A Col NWD; Anderson, G Witt NWD
Cc: Ruch, Robert J COL NWO
Sent: Tue Jun 21 05:34:03 2011
Subject: 1630 CST/1430 PST meeting

Witt and Bob-

Highly recommend stop doing the 1630 CST meeting. In my eyes, it is not productive anymore and simply reiterates what we already brief at the 1700 CST CODEL call.

Wasting valuable staff time now.

Tony

Building Strong!

Colonel Anthony J. Hofmann, PMP
Commander, Kansas City District
U.S. Army Corps of Engineers

Office: (816) 389-3202

Fax: (816) 389-2027

<http://www.nwk.usace.army.mil/>

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 11:59 AM
To: [REDACTED] NWD
Cc: Bertino, John J Jr NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWD; [REDACTED] NWD
Subject: RE: Revised - Dam Safety Summary by [REDACTED] - Missouri River mainstem dams (UNCLASSIFIED)
Attachments: Missouri Mainstem Dam Status June 11.docx

Classification: UNCLASSIFIED
Caveats: NONE

I have updated this attachment, based on additional information from the Omaha District Dam Safety PM, [REDACTED]

[REDACTED] clarified that it is possible to install stoplogs at the downstream end of the Garrison regulating outlets, and plans are underway to inspect the tunnels.

Regards,

[REDACTED]

-----Original Message-----

From: [REDACTED] NWD02
Sent: Monday, June 20, 2011 4:44 PM
To: [REDACTED] NWD
Cc: Bertino, John J Jr NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02
Subject: Dam Safety Summary by Laila - Missouri River mainstem dams (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED], per your request - here is my personal summary of the dam safety issues on the Missouri River mainstem dams as of today.

To my knowledge the dams are performing well, and there are no unexpected instrumentation readings or evidence of distress.

This write up reflects my personal interpretations. Contents have not been coordinated with Omaha District, as staff are very busy.

I am cc'ing Omaha District staff, for their potential use.

Regards,

[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

Memorandum for NWD Dam Safety Officer ()

Subject: Summary of Dam Safety Observations / Potential Issues of Concern for Mainstem Missouri Dams.

1. The following paragraphs provided a summary of observations during the spring 2011 flood for the six mainstem Missouri River dams, as requested by Dr. Bhamidipaty on 20 June 2011. Dam Safety flood response planning was initiated on 11 May 2011. Efforts intensified on 26 May 2011 when updated forecasts identified record inflow conditions. Critical dam surveillance is ongoing.

NOTE ; THIS INFORMATION REFLECTS THE PERSONAL OPINIONS OF THE NWD DAM SAFETY PROGRAM MANAGER, AND HAVE NOT BEEN VETTED / DISCUSSED WITH THE OMAHA DISTRICT TEAM WHO ARE BUSY WITH FLOOD FIGHTING AND DAM SURVEILLANCE.

2. Descriptions of Dam Safety observations :

2.1 Fort Peck Dam.

a. Current Conditions (on 21 June 2011).

- Reservoir Elevation = 2251.8 - Surge (Top of Spillway Gates = 2250)
- Discharge = 60,000 cfs
- Regulating Outlets are not used due to structural concerns.

b. Dam Safety Observations to date.

- No unusual instrumentation readings or evidence of distress have been noted. (24-7 Surveillance is ongoing.) Closely monitoring elevated piezometric levels along the downstream toe, which are expected.
- Loss of station power required temporary use of Generators for spillway operations. Now restored.
- Spillway discharges have caused erosion along the east (left) wing wall. Initial repairs (adding riprap) were performed on 06 June. Additional riprap repairs are needed to protect the structure. Scour rates have decreased since initial releases. USGS performed underwater survey. Observed scour to date appears to be less than modeled in previous studies. Close monitoring continues.

c. Potential Areas of Concern.

- Model study from 1996 indicated the potential for cavitation of rebounded floor slabs at discharges exceeding 25,000 cfs. Flow patterns along spillway are smooth, with no indication of cavitation to date.
- If the reservoir reaches elev. 2255 (not anticipated), the flood tunnel ring gates will be overtopped, causing undesired flow through the outlet works.

2.2 Garrison Dam.

a. Current Conditions (on 20 June 2011).

- Reservoir Elevation = 1854.3 - Surge (Top of Spillway Gates = 1854)

- Discharge = 150,000 cfs
- Both spillway and regulating tunnels are in use.

b. Dam Safety Observations to date.

- No unusual instrumentation readings or evidence of distress have been noted. (24-7 Surveillance was reduced to 20 hour surveillance two weeks ago. Will return to 24-7 in late June.)
- Relief well channel partially inundated, limits monitoring.
- Following initial spillway releases, "rooster tails were noted along a row of downstream slab joints. Flows diverted and eroded joints were successfully patched.
- Regulating outlet tunnel releases are turbulent, causing erosion along both tailrace banks. The east (left) bank erosion endangers the switchyard. The west (right) bank erosion endangers a critical access road and adjacent west powerhouse slope. USBR crews performed repairs using available emergency riprap stockpiles (good rock). Intermittent erosion continues, due to fluctuating outlet tunnel discharges in response to hydropower requirements. A Contract will be issued today to add riprap further downstream. A Contract has been awarded to replace depleted riprap stockpiles.
- Erosion of the outlet tunnel backfill has occurred due to wave overtopping, but is not a significant dam safety concern.
- Flood tunnel inspection is being coordinated.
- Williston Levees have experienced long duration record stages. 24-hour surveillance has been occurring from about 3 weeks. Numerous boils have been identified, at locations different from the previous (1996) high pool observations. Generally boils are flowing clear. Sandbag rings have been added to stabilize boils. One large boil was discharging fines. An inverted filter was constructed and Omaha District drill crews installed 3 new relief wells. The boil is currently stable. Access for placing rock is a problem, as the landward toe road is too soft for transporting material. A Contractor is currently placing gravel atop the toe road, to aid response actions.

c. Potential Areas of Concern.

- An historic shallow movement area exists along the upstream embankment slope, approximately between stations 60+00 to 90+00. The movement is attributed to low plasticity clays beneath the riprap and movement is continuing at historic rates. If movements accelerate, repairs may be necessary to protect the crest.
- Excessive pressures in the West Terrace gravels (near the powerhouse), and Sandy Phase of the west abutment pose the greatest seepage concerns. This area is being closely monitored.
- Cavitation damage to the regulating outlet tunnels occurred in 1996. It is unknown if patches have held up during the current flood releases. Recommend diverting flows to the spillway and inspecting the tunnels. Project personnel are pursuing a crane contract to place stoplogs downstream of the conduit and allow inspection.
- Stilling basin erosion is a concern. Riprap from the eroded channel bank is likely to cause ball milling to the concrete structures. Recommend stilling basin inspections as a post flood action.
- Spillway gate overtopping is a concern given current high reservoir levels and wind wave actions. Gates cannot be overtopped and require aggressive monitoring to ensure wind wave set-ups will not lap the top of gates. If surcharge elevations climb, additional gate

opening will be required to maintain needed freeboard for wave set up across the 28 gates, increasing discharges to Oahe, potentially in excess of the Water Management Plan.

- Lignite seams are present along the east abutment and beneath the spillway. The lignite is more pervious than surrounding soils, and serves as seepage pathways.
- Outlet tunnel gate reliability is a concern given the numerous gate changes. It is unknown if the gates were designed for current dynamic operations. Some Operations personnel would like to add remote controls to the gates to aid Operators. Need to comply with EC 1110-2-6071, which requires Commander's approval.

2.3 Oahe Dam.

a. Current Conditions (on 20 June 2011).

- Reservoir Elevation = 1618.7 (Top of Spillway Gates =1620)
- Discharge = 160,000 cfs
- Regulating tunnels are in use.

b. Dam Safety Observations to date.

- No unusual instrumentation readings or evidence of distress have been noted in the historic Station 61+00 historic foundation movement area. (24-7 Surveillance is ongoing.)
- Downstream bank erosion is being monitored and mitigated so bridge is maintained.
- Erosion of the outlet tunnel backfill has occurred due to wave overtopping, but is not a significant dam safety concern.

c. Potential Areas of Concern.

- Stability of the historic Station 61+00 movement area merits aggressive monitoring. This area is "less reliable" than the rest of the embankment. The 2001 Expert Panel concluded that this zone is stable up to a reservoir elevation of 1620. However, the 2001 panel members recommended conducting additional materials testing and stability analyses, which have not been completed. (The Panel's recommendations conclusions about safe operations were not dependent on the additional testing being performed.) In 2010 new shear strength tests were performed and data was reviewed by Dr. Bradley from Virginia Tech. The evaluation determined that the clay shale foundation strengths are less (3 degrees versus 8 degrees) than used for the 2001 stability analysis. Over the last ten years numerous vertical drains have been added in the vicinity of Station 61+00 to help relieve foundation pressures. This is the first test of this drain system.
- Stilling basin erosion is a concern. Riprap from the eroded channel bank is likely to cause ball milling to the concrete structures. Recommend stilling basin inspections as a post flood action.
- Spillway erosion. If inflow conditions exceed the combined outlet tunnel and powerhouse capacity of 165,000 cfs, it may be necessary to use the spillway. The Oahe spillway channel is unlined and sited in weak material. Significant erosion

would occur, as well as damage to downstream infrastructure that could impede access to the dam.

2.4 Big Bend Dam.

- a. Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 1419.4 (Top of Spillway Gates =1423)
 - Discharge = 160,000 cfs
 - Spillway is in use, no regulating outlet tunnels.
- b. Dam Safety Observations to date.
 - No unusual instrumentation readings or evidence of distress have been noted.
 - This is the first time this spillway has been used. No problems reported to date.
 - Spillway bank erosion was repaired on 11 June.
 - Relief well channel inundated, limits monitoring.
- c. Potential Areas of Concern.
 - None at this time. Big Bend is a re-regulation dam for Oahe, with minor pool fluctuations.

2.5 Fort Randall Dam.

- a. Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 1365.5 (Top of Spillway Gates =1375)
 - Discharge = 143,000 cfs
 - Regulating tunnels are not in use for flood control. One tunnel gate was modified for fine regulation. Preference is to use spillway.
- b. Dam Safety Observations to date.
 - No unusual instrumentation readings or evidence of distress have been noted.
 - Following initial spillway use for this event, flows from the spillway entered the west (right) spillway wall drains. Spillway backfill materials became pressurized and eroded out through damaged sections of drain. The drain eventually plugged and overlying slabs collapsed. Approximately 8 feet of vertical subsidence of the fill occurred near the bottom of the stilling basin. Flows were diverted for evaluation. The wall drains were plugged, backfill replaced, and piezometers installed along right side of the spillway. Leftover patch material from Garrison is used to repairs areas with slab erosion, and will be completed today. During initial repairs, flows were diverted to the left side of the spillway and pressurized the left side backfill as well. Flows were again diverted and damage to the left side was alleviated. Currently discharges are limited to the center spillway bays.
- b. Potential Areas of Concern.
 - Updated forecast indicates past record pool of 1372.2 will be matched in mid July, triggering 24-7 surveillance.

2.6 Gavins Point Dam.

- a. Current Conditions (on 20 June 2011).
 - Reservoir Elevation = 1207.1 (Top of Spillway Gates =1210)
 - Discharge = 150,000 cfs
 - Spillway is in use, no regulating outlet tunnels.
- b. Dam Safety Observations to date.
 - No unusual instrumentation readings or evidence of distress have been noted. Gavins Point is within normal pool ranges.
 - Added riprap to downstream channel due to bank erosion.
- c. Potential Areas of Concern.
 - None at this time. The previous record pool of 1209.7 occurred in 2010. Do not anticipate reaching pools levels that will trigger 24-7 surveillance.
 - Lake Yankton, is a former borrow area immediately downstream of the Gavins Point embankment. Water levels in Lake Yankton control piezometric pressures in the Gavins Point embankment. High tailwater levels may impact the integrity of levee containing Lake Yankton, which is being monitored.

NWO

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 11:23 AM
To: Farhat, Jody S NWD02
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Can do

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 11:18 AM
To: [REDACTED] NWO
Subject: FW: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] - would you be available to talk to Cargill with me at 10:00 on Thursday?

Jody

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]
Sent: Tuesday, June 21, 2011 10:00 AM
To: Farhat, Jody S NWD02
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Jody,

Thanks for your quick response and we appreciate your willingness to talk with us. With the current release schedule from Gavin's Point at 150,000 kfs we are maintaining our operations. Our discussion will focus on the triggers that could lead to an increase from Gavin's Point.

Would you be available for a :20 minute discussion with our leadership team on Thursday June 23rd, at 10:00am central time (Dial 866-318-5174 Code# 5052660998). The call would include our campus partners and leaders from the following companies on our site in Blair Nebraska:

- Cargill Inc.
- Evonik Inc.
- Purac Inc.
- Novozymes Inc.

Natureworks LLC.

We know how busy you are and appreciate your time and the dedication of the entire Army Corp team to minimizing the impact to our community and customers.

Regards,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of choice.

Monty Gartin | Health, Safety & Security Team Leader |Cargill Corn Milling 650 Industrial Park Drive | Blair, NE 68008 | 402-533-1381 | Cell 402-306-3709 | monty_gartin@cargill.com

cid:609003111@05022009-1FD7 Caring Leadership > Systems Excellence > Injury Free Lifestyle

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [mailto:Jody.S.Farhat@usace.army.mil]

Sent: Thursday, June 16, 2011 1:34 PM

To: Gartin, Monty - Monty_Gartin@cargill.com

Cc: [REDACTED]@usace.army.mil; [REDACTED]@usace.army.mil;

[REDACTED]@usace.army.mil

Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Monty,

We would be happy to discuss the planned releases with you. As you might expect, we are very busy with the ongoing flood event, so we would prefer setting up a conference call, or if you prefer a face-to-face meeting it would be preferable if you came to our office.

Regards,

Jody Farhat, P.E.

Chief, Missouri River Basin Water Management

jody.s.farhat@usace.army.mil

Office: 402-996-3840

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]

Sent: Wednesday, June 15, 2011 4:43 PM

To: Management, Missouri Water NWD02

Subject: Cargill Inc - Blair Nebraska

To Jody Farhat and/or Staff,

We are Cargill Corn Milling in Blair Nebraska, our site is a bio-refinery which includes 6 joint ventures and has an assets value over 2 billion dollars. We have been working with the Army Corps of Engineers from the Omaha District daily. Our relationship with the Corps of engineers has been very positive and we look forward to more interactions.

We recently met with Randall Behm to help us understand the potential impact of the current release to our site. This meeting helped us to better understand the science and the protocols used to manage the current situation on the Missouri river. Randall discussed with us his role and his understanding of the Corps future release plans.

We know how busy you are, but we would also like to meet with you or a senior member of your staff to better understand future plans and release scenarios. We have created a 3.5 mile berm around our site, but are still very concerned with the economic impact to our customers and the state of Nebraska if we shutdown.

We would like to invite you to our campus for a formal review and discussion on our mutual goals around the safety and well being of our site and community. We look forward to working with the Army Corps of Engineers in a positive and proactive manor. If coming to Blair is not feasible, we are very willing to come to you.

Thank you on behalf of our employees and community,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of
choice.

Monty Gartin | Health, Safety & Security Team Leader |Cargill Corn Milling
650 Industrial Park Drive | Blair, NE 68008 | 402-533-1381 | Cell
402-306-3709 | monty_gartin@cargill.com

cid:609003111@05022009-1FD7 Caring Leadership > Systems Excellence > Injury
Free Lifestyle

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 10:40 AM
To: DLL-CENWD-PDR; [REDACTED] NWO
Subject: Tuesday Rain Report

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
DATE=Jun 21, 2011 - 14:02:17
0

>>>>>>> PAGESIZE 60

>>>>>>> DUMPPP24 * *

0**NOTE** DATA FOR THE PERIOD 06/21/2011-12Z THROUGH 06/21/2011-12Z WILL BE PROCESSED.
QUANTITY DESC (0.01)
OBONLY
END

0PP24 DATA FOR 06/21/11-12Z THRU 06/21/11-12Z

0 - = MISSING VALUE OR SUM E = ESTIMATED VALUE P = PARTIAL SUM

0STATION			PERIOD
ID	DESCRIPTION	STATE	06/21 SUM
SHRK1	SHARON SPRINGS	KS	4.80 4.81
SSPK1	SHARON SPRINGS	KS	4.77E 4.78
MIRS2	MILLER 1NW	SD	3.94 3.95
ENDN1	ENDERS DAM	NE	3.77 3.78
9V9	CHAMBERLAIN	SD	3.76 3.77
CBRS2	CHAMBERLAIN 5S	SD	3.66 3.67
HZZS2	HAYES 7SW	SD	3.55 3.56
WITS2	WHITE LAKE	SD	3.50 3.51
WTES2	WHITE LAKE (SDSU)	SD	3.49E 3.50
TRBK1	TRIBUNE 1W	KS	3.11 3.12
DOSS2	DOLAND	SD	3.10E 3.11
TBNK1	TRIBUNE 1W	KS	3.08E 3.09
GRFK1	GRAINFIELD	KS	2.88 2.89
KBLS2	KIMBALL	SD	2.84E 2.85
KIMS2	KIMBALL (AMRAD)	SD	2.84E 2.85
IRQS2	IROQUOIS	SD	2.76E 2.77
OAKK1	OAKLEY 4W	KS	2.62 2.63
PAXN1	PAXTON	NE	2.62 2.63
BRWK1	BREWSTER 4W	KS	2.61 2.62
CPRS2	CARPENTER 4NNE	SD	2.56E 2.57
FAUS2	FAULKTON 1NW	SD	2.54 2.55
PCPS2	PLATTE 8SW, PLATTE C	SD	2.54E 2.55
FALS2	FAULKTON	SD	2.53E 2.54
KMBS2	KIMBALL 11SSE	SD	2.53E 2.54
OKLK1	OAKLEY #2	KS	2.53E 2.54
HURS2	HURON, JAMES R	SD	2.52 2.53
HRHS2	HURON (AMRAD)	SD	2.50E 2.51
OAYK1	OAKLEY	KS	2.50E 2.51
LANS2	LANTRY 4NW RAWS	SD	2.49 2.50
HORS2	HURON	SD	2.46E 2.47
HON	HURON	SD	2.45 2.46
WAUN1	WAUNETA	NE	2.44E 2.45
ENSN1	ENDERS, FRENCHMAN CR	NE	2.40E 2.41
WLLK1	WALLACE	KS	2.40 2.41

IONS2	IONA 2NE	SD	2.36E	2.37
BROS2	BROOKINGS 2NE	SD	2.35	2.36
CNNS2	CANTON	SD	2.33	2.34
ORNN1	ORLEANS 2W, REPUB R	NE	2.33	2.34
VDLN1	VERDEL 6SSE	NE	2.33	2.34
STMN1	STAMFORD, SAPPA CR	NE	2.31E	2.32
VRDN1	VERDEL, NIOBRARA R	NE	2.31E	2.32
CNTS2	CANTON (AMRAD)	SD	2.28E	2.29
BKX	BROOKINGS	SD	2.27E	2.28
CAVS2	CAVOUR 10S	SD	2.27E	2.28
WCCS2	CROOKS, WILLOW CR	SD	2.27	2.28
FPRS2	FORT PIERRE 17WSW	SD	2.24E	2.25
PIR	PIERRE REGIONAL AP	SD	2.19	2.20
DSMS2	DE SMET	SD	2.17E	2.18

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC

DATE=Jun 21, 2011 - 14:02:17

0

STATION				PERIOD
ID	DESCRIPTION	STATE	06/21	SUM
TNRC2	TOWNER	CO	2.16E	2.17
RETS2	REE HEIGHTS 15S	SD	2.15	2.16
PLKS2	PLANKINTON	SD	2.14E	2.15
DUPS2	DUPREE	SD	2.13E	2.14
PHMS2	PIERRE	SD	2.13E	2.14
FAAS2	FAULKTON 6ESE	SD	2.12E	2.13
CRKS2	CROOKS	SD	2.11E	2.12
FTPS2	FT PIERRE 3S, BAD R	SD	2.09E	2.10
AKRI4	AKRON, BIG SIOUX R	IA	2.07	2.08
WINK1	WINONA 8W	KS	2.07E	2.08
WIAK1	WINONA 8W	KS	2.07E	2.08
PXTN1	PAXTON KORTY POWER	NE	2.04E	2.05
VOLS2	VOLGA	SD	2.03E	2.04
ESTI4	ESTHERVILLE 2N	IA	2.00	2.01
MSSS2	MISSION	SD	1.99	2.00
FSD	SIOUX FALLS	SD	1.99	2.00
FSDS2	SIOUX FALLS WFO	SD	1.98E	1.99
SFLS2	SIOUX FALLS 38A	SD	1.97E	1.98
GRGS2	GREGORY	SD	1.96E	1.97
ELKS2	ELK POINT 13NE	SD	1.95E	1.96
HRNS2	HURON	SD	1.93E	1.93
ONAS2	ONIDA 25W	SD	1.91E	1.91
PIES2	OAHE DAM	SD	1.89E	1.89
BRKS2	BROOKINGS, BIG SIOUX	SD	1.87	1.88
RRSS2	ROSCOE	SD	1.87E	1.88
ROSS2	ROSCOE	SD	1.87	1.88
SHLC2	SHERIDAN LAKE	CO	1.87E	1.88
CARS2	CARTHAGE	SD	1.86	1.87
WNAK1	WINONA	KS	1.84E	1.85
MAXN1	MAX 13N	NE	1.83E	1.84
LINC033	SUTHERLAND 1NW	NE	1.83E	1.84
GVYS2	GANN VALLEY 8SW	SD	1.79E	1.79
OACS2	OACOMA 9SW, WHITE R	SD	1.79	1.79
ONIS2	ONIDA 7NE	SD	1.79	1.79
LINC036	SUTHERLAND 1N	NE	1.79E	1.79
LTIK1	LEOTI	KS	1.78E	1.78
KSSH14	GOODLAND 13SW	KS	1.77E	1.77

MBG	MOBRIDGE	SD	1.77	1.77
OKES2	OKREEK 4SSW	SD	1.77E	1.77
LEOK1	LEOTI	KS	1.75E	1.75
ODX	ORD	NE	1.75	1.75
WEWS2	WEWELA 1N	SD	1.75	1.75
BTWS2	BRENTWOOD COLONY	SD	1.74E	1.75
DOLS2	DOLAND	SD	1.74	1.75
CANS2	CANTON, BIG SIOUX R	SD	1.73E	1.74
BGRS2	BADGER 2S	SD	1.72E	1.73
HOXK1	HOXIE	KS	1.72E	1.73
HTFS2	HARTFORD, SKUNK CR	SD	1.71E	1.72
LYNS2	LYONS 5SSW	SD	1.71E	1.72
MRDS2	MISSION RIDGE 5NW	SD	1.71E	1.72
SHRM5	SHERBURN 3WSW	MN	1.71E	1.72
PAHS2	KEYAPAHA, KEYAPAHA R	SD	1.68E	1.68
Y26	MOBRIDGE 2NNW	SD	1.68E	1.68

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ID	DESCRIPTION	STATE	06/21	PERIOD SUM
SXFS2	SIOUX FALLS NO CLIFF	SD	1.67E	1.67
LUPN1	LOUP CITY, MID LOUP	NE	1.66	1.66
PIRS2	PIERRE	SD	1.66E	1.66
HAFS2	HARTFORD	SD	1.65E	1.65
GRWK1	TRIBUNE 13NNE	KS	1.65	1.65
GEOK1	GOODLAND CITY	KS	1.64	1.64
DBZ	GOODLAND 4W	KS	1.62E	1.63
FUHS2	SIOUX FALLS 7S	SD	1.62E	1.63
WAVS2	SUX FALLS WESTERN AV	SD	1.62	1.63
MNGK1	MINGO 6E	KS	1.61E	1.62
PKRS2	PARKER, WEST FORK	SD	1.61	1.62
STKS2	STICKNEY	SD	1.61E	1.62
BRCS2	BRUCE, BIG SIOUX R	SD	1.60	1.61
HXIK1	HOXIE	KS	1.60E	1.61
WINS2	WINNER	SD	1.60E	1.61
ICR	WINNER AIRPORT	SD	1.60	1.61
SFD	WINNER AIRPORT	SD	1.60E	1.61
DRSK1	DRESDEN	KS	1.59	1.60
AHOC2	ARAPAHOE 12S	CO	1.58E	1.59
DNSK1	DENSMORE 2N	KS	1.58	1.59
HYTS2	HAYTI	SD	1.58	1.59
OKRS2	OKREEK 4W	SD	1.58E	1.59
ARLS2	ARLINGTON 1W	SD	1.57E	1.58
GAVS2	GANN VALLEY 9NW	SD	1.56E	1.56
ECSN1	ERICSON 8WNW	NE	1.55	1.55
MARS2	MARION	SD	1.55E	1.55
SACI4	SAC CITY	IA	1.55	1.55
BLDS2	BROADLAND 5NE	SD	1.54E	1.54
INWI4	INWOOD	IA	1.54E	1.54
RSO1	ROSCOE, SO PLATTE R	NE	1.54	1.54
RSLK1	RUSSELL SPRNGS 17SSW	KS	1.54E	1.54
WCMS2	SIOUX FALLS 6SE	SD	1.54E	1.54
WHTS2	WHITE	SD	1.54E	1.54
MIDS2	MIDLAND, BAD R	SD	1.53	1.53
BUTN1	BUTTE	NE	1.52	1.52

LINC004	HERSHEY 6NW	NE	1.52E	1.52
LLAS2	LEOLA	SD	1.52E	1.52
LEOS2	LEOLA SDSU	SD	1.52	1.52
NBRN1	NIOBRARA 6WSW	NE	1.52E	1.52
EABS2	EAGLE BUTTE	SD	1.51E	1.51
RSRS2	SIOUX FALLS 5SW	SD	1.51E	1.51
SIFS2	SIOUX FALLS,SKUNK CR	SD	1.51E	1.51
BRAS2	BRANDON	SD	1.50E	1.50
LOLS2	LEOLA 1E	SD	1.50E	1.50
RESS2	REE HEIGHTS, WOLF CR	SD	1.49E	1.50
RLLK1	RUSSELL SPRINGS 3N	KS	1.49	1.50
TEAS2	TEA (AMRAD)	SD	1.49E	1.50
WUDS2	WOOD	SD	1.49E	1.50
DDTK1	GOODLAND	KS	1.48	1.49
GLD	GOODLAND(RENNER FLD)	KS	1.48E	1.49
HRTN1	HARTINGTON	NE	1.48	1.49
LGIK1	LONG ISLAND 1N	KS	1.48E	1.49
GOVK1	GOVE 4W, HACKBERRY C	KS	1.47	1.48

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HSYN1	HALSEY 2W	NE	1.47 1.48
RELS2	RELIANCE 4NE	SD	1.47E 1.48
GNVS2	GANN VALLEY	SD	1.46 1.47
MGD	GOODLAND 12N	KS	1.46E 1.47
GDLK1	GOODLAND 23SW	KS	1.46E 1.47
LYON1	LYONS	NE	1.45 1.46
WDRK1	WOODRUFF 3WSW	KS	1.45E 1.46
BKTI4	BROKEN KETTLE RAWS	IA	1.44E 1.45
LKFM5	LAKEFIELD	MN	1.44 1.45
GGBS2	GETTYSBURG 10SW	SD	1.43E 1.43
RENS2	RENNER	SD	1.43E 1.43
MNKI4	BRUNSVILLE	IA	1.42 1.42
ACYS2	ACADEMY 2NE	SD	1.41E 1.41
CBKK1	COLBY 1SW	KS	1.41 1.41
GREN1	GREELEY	NE	1.41 1.41
MSNS2	MISSION 14S	SD	1.41 1.41
CSPW4	CASPER MOUNTAIN	WY	1.40 1.40
COSS2	CORSON, SPLIT ROCK C	SD	1.40 1.40
SEKS2	ELKTON	SD	1.40E 1.40
HOX	HOXIE	KS	1.40E 1.40
SIOS2	SIOUX FALLS	SD	1.40E 1.40
CHMN1	CHAMBERS	NE	1.39 1.39
PCHI4	HINTON 4W, PERRY CR	IA	1.39E 1.39
VRGN1	VIRGINIA 4SSE	NE	1.39 1.39
BADS2	BADGER 4NE	SD	1.38E 1.38
ONTS2	ORIENT	SD	1.38E 1.38
ALTS2	ALCESTER	SD	1.37E 1.38
DNSI4	DENISON	IA	1.37 1.38
HERM5	HERON LAKE	MN	1.37 1.38
CNGS2	CANNING 1W	SD	1.36E 1.37
YEN	ESTEVAN	SK	1.36E 1.37
MTVS2	MT VERNON, FIRESTEEL	SD	1.36 1.37
BKCI4	AKRON 11E	IA	1.35E 1.36

SXNI4	JAMES 4W	IA	1.34E	1.35
BBDS2	BIG BEND DAM	SD	1.33E	1.34
JCKM5	JACKSON	MN	1.33E	1.34
RWCI4	ROCKWELL CITY #2	IA	1.33E	1.34
SIOI4	SIOUX CITY, PERRY CR	IA	1.33	1.34
HOES2	HOSMER 9E	SD	1.32E	1.33
HUMS2	HUMBOLT	SD	1.32E	1.33
FAXS2	FAIRFAX #2	SD	1.31E	1.31
SXGI4	SIOUX CITY	IA	1.30	1.30
SOUI4	SIOUX CITY 8N	IA	1.30E	1.30
BYRI4	BOYER 4SE	IA	1.29E	1.29
BCTN1	BANCROFT, LOGAN CR	NE	1.28E	1.28
EST	ESTHERVILLE	IA	1.28	1.28
DOGS2	HE DOG LAKE	SD	1.28E	1.28
ODEI4	ODEBOLT	IA	1.28E	1.28
WSCS2	ONIDA 15NW	SD	1.28E	1.28
BONS2	BONESTEEL	SD	1.27E	1.27
IMPN1	IMPERIAL	NE	1.27	1.27
MFRI4	MILFORD 4NW	IA	1.27E	1.27
NRLN1	NORTH LOUP	NE	1.27E	1.27

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SALS2	ALCESTER	SD	1.26E	1.26
BNKN1	BENKELMAN	NE	1.26	1.26
GLDS2	GLAD VALLEY 2W	SD	1.26E	1.26
IML	IMPERIAL	NE	1.26	1.26
LSXI4	LITTLE SIOUX 2NW	IA	1.26	1.26
SFMS2	SUX FALLS, MAPLE ST	SD	1.26	1.26
BENN1	BENKELMAN 1SW	NE	1.25E	1.25
HAYE002	ELSIE 14SE	NE	1.25E	1.25
PKSS2	PICKSTOWN	SD	1.25	1.25
PKS	PICKSTOWN	SD	1.25E	1.25
ALCS2	ALCESTER	SD	1.24E	1.25
BEKN1	BENKELMAN 2SSW	NE	1.24E	1.25
BDCK1	BIRD CITY 10S	KS	1.24E	1.25
FAIS2	FAITH	SD	1.24E	1.25
D07	FAITH AIRPORT	SD	1.24	1.25
HSNS2	HARRISON 4W	SD	1.24E	1.25
ORDN1	ORD, NORTH LOUP R	NE	1.24	1.25
VTN	VALENTINE	NE	1.24	1.25
VTNN1	VALENTINE 4SSE	NE	1.24E	1.25
VERN1	VERDEL, PONCA CR	NE	1.24E	1.25
OCHI4	OCHEYEDAN	IA	1.23	1.24
SPCN1	SPENCER, NIOBRARA R	NE	1.23E	1.24
ILLS2	MILLER 15S	SD	1.22E	1.23
SPKN1	SPARKS, NIOBRARA R	NE	1.22E	1.23
WLPS2	WALL LAKE	SD	1.22	1.23
HARL008	ALMA	NE	1.21E	1.22
ARCN1	ARCADIA	NE	1.21E	1.22
RFDS2	REDFIELD, JAMES R	SD	1.21	1.22
SLBI4	STORM LAKE 2E	IA	1.21E	1.22
WLKS2	WALL LAKE	SD	1.21E	1.22
P05	PHILIP 3E	SD	1.20E	1.21

PHP	PHILLIP	SD	1.20	1.21
RAYS2	RAYMOND 3NE	SD	1.20E	1.21
FTHS2	FAITH 14NW, MOREAU R	SD	1.19	1.20
SIBI4	SIBLEY 3NE	IA	1.19	1.20
WLSN1	WILSONVILLE	NE	1.19	1.20
HFDS2	HARTFORD	SD	1.18E	1.18
NFLN1	NORFOLK 4W	NE	1.18	1.18
PHLS2	PHILLIP 1S	SD	1.18E	1.18
FPKS2	FRANKFORT	SD	1.17E	1.17
GLHS2	GLENHAM	SD	1.17E	1.17
LWTN1	LEWISTON	NE	1.17E	1.17
OAKN1	OAKLAND	NE	1.17E	1.17
PKCN1	PARKS, ROCK CR	NE	1.17	1.17
STES2	STEPHAN 10SE	SD	1.17E	1.17
BCRW4	BATES CREEK	WY	1.16E	1.16
FLAS2	FLANDREAU	SD	1.16E	1.16
HERN1	HERSHEY 5SSE	NE	1.16E	1.16
CLAS2	CLARK	SD	1.15	1.15
LKSS2	FORT THOMPSON	SD	1.15E	1.15
HCKS2	HITCHCOCK	SD	1.15E	1.15
IPSS2	IPSWICH	SD	1.15E	1.15
MIFI4	MILFORD, LTL SIOUX R	IA	1.15E	1.15

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SBLI4	SIBLEY	IA	1.15E	1.15
BNTS2	BLUNT	SD	1.14E	1.14
DERS2	DELL RAPIDS 2SW	SD	1.14E	1.14
ESTS2	ESTELLINE	SD	1.14E	1.14
CCKS2	FORT THOMPSON 3E	SD	1.14E	1.14
LSHI4	LOESS HILLS RAWS	IA	1.14E	1.14
PSGI4	PISGAH, SOLDIER R	IA	1.14E	1.14
WLLN1	WALLACE 2W	NE	1.14	1.14
ASHN1	ASHTON	NE	1.13E	1.13
HTOS2	ASHTON 5E	SD	1.13E	1.13
EAGS2	EAGLE BUTTE (AMRAD)	SD	1.13E	1.13
IDHC2	MT EVANS RES STATION	CO	1.13E	1.13
WBN14	WOODBINE	IA	1.13E	1.13
MDDN1	MADRID	NE	1.12	1.13
MINN1	MINDEN	NE	1.12	1.13
ODAS2	ONIDA 4NW	SD	1.12E	1.13
PAES2	PARMELEE 7SSW	SD	1.12E	1.13
PTTS2	PLATTE (AMRAD)	SD	1.12E	1.13
KEYA001	SPRINGVIEW 17WNW	NE	1.12E	1.13
APKI4	ARNOLDS PARK	IA	1.11E	1.12
LOGI4	LOGAN	IA	1.11	1.12
LGNI4	LOGAN #2, BOYER R	IA	1.11E	1.12
SSCN1	SOUTH SIOUX CITY	NE	1.11E	1.12
CHER007	VALENTINE 10WNW	NE	1.11E	1.12
COOI4	COON RAPIDS	IA	1.10	1.11
MMLN1	MILLER	NE	1.10	1.11
MLLN1	MILLER	NE	1.10E	1.11
MERS2	MILLER 15S	SD	1.10E	1.11
PARN1	PARKS 17N	NE	1.10	1.11

PIPM5	PIPESTONE	MN	1.10	1.11
SLMS2	SALEM 5NE	SD	1.10	1.11
SCCS2	CHESTER, SKUNK CR	SD	1.09E	1.10
ERFS2	FREDERICK 9W, ELM R	SD	1.09	1.10
LSSI4	SPENCER, LTL SIOUX R	IA	1.09	1.10
CKPI4	CHEROKEE	IA	1.08	1.09
CHKI4	CHEROKEE, LTL SIOUX	IA	1.08E	1.09
ELLS2	FREDERICK 4SW	SD	1.08E	1.09
GDNS2	GARDEN CITY	SD	1.08E	1.09
HRSI4	HARRIS	IA	1.08E	1.09
HOMS2	HOSMER 1E	SD	1.08E	1.09
MONI4	MONDAMIN	IA	1.08E	1.09
VGLS2	VIRGIL	SD	1.08E	1.09
GOSN1	GROSS 1E	NE	1.07E	1.08
HARI4	HARTLEY	IA	1.07E	1.08
JMEI4	JAMES 1NE, FLOYD R	IA	1.07E	1.08
RDFS2	REDFIELD	SD	1.07E	1.08
BEKS2	WINFRED 2S	SD	1.07	1.08
EVYI4	EVERLY 3WNW	IA	1.06E	1.06
HTYI4	HARTLEY	IA	1.06E	1.06
HOWS2	HOWARD	SD	1.06E	1.06
KONK1	KANORADO	KS	1.06E	1.06
PAMS2	PARMELEE 7SSW	SD	1.06E	1.06
PURN1	PURDUM	NE	1.06E	1.06

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ID	DESCRIPTION	STATE	06/21 SUM
Y68	TRACY	MN	1.06E 1.06
ATNS2	ASHTON, JAMES R	SD	1.05 1.05
FMTN1	FREMONT	NE	1.05 1.05
JKSNI	JACKSON	NE	1.05E 1.05
LAWI4	LAWTON	IA	1.05E 1.05
NRTK1	NORTON 9SSE	KS	1.05E 1.05
WBWS2	WATERTOWN (BROADWAY)	SD	1.05 1.05
WTON8	WILTON	ND	1.05 1.05
ASHS2	ASHTON 2SW	SD	1.04E 1.04
GRYI4	GRAY	IA	1.04E 1.04
LKWM5	LAKE WILSON	MN	1.04E 1.04
PRKS2	PARKER, WEST FORK	SD	1.04E 1.04
RLIS2	RELIANCE (AMRAD)	SD	1.04E 1.04
GPEK1	SELDEN	KS	1.04E 1.04
SUX	SIOUX CITY	IA	1.04 1.04
WATS2	WATERTOWN	SD	1.04E 1.04
WRTS2	WATERTOWN 1W	SD	1.04E 1.04
WSWS2	WESSINGTON SPRNG 7SW	SD	1.04E 1.04
WRNM5	WORTHINGTON 2NNE	MN	1.04 1.04
AUDI4	AUDUBON	IA	1.03 1.03
FOD	FT DODGE	IA	1.03E 1.03
3DE	REDFIELD	SD	1.03E 1.03
FSHS2	SHADEHILL RESERVOIR	SD	1.03 1.03
USTS2	USTA 8WNW	SD	1.03E 1.03
LSKM5	CURRIE	MN	1.02E 1.02
HODS2	HOWARD 11WSW	SD	1.02E 1.02
HWS2	HOWARD 8SE	SD	1.02E 1.02

IRWI4	IRWIN 3ESE	IA	1.02E	1.02
LENS2	LENNOX 3NE	SD	1.02E	1.02
MURS2	MURDO	SD	1.02E	1.02
ATY	WATERTOWN AIRPORT	SD	1.02	1.02
ASTS2	ASTORIA 4S	SD	1.01	1.01
BLTS2	BLUNT 6E	SD	1.01E	1.01
SWNN1	CHAMBERS 18W	NE	1.01E	1.01
COLN8	COLUMBUS	ND	1.01E	1.01
ERLI4	EARLING	IA	1.01E	1.01
HOMN1	HOMER 3NE	NE	1.01E	1.01
MSP	MINNEAPOLIS	MN	1.01	1.01
ROBS2	ROUBAIX, ELK CREEK	SD	1.01	1.01
SOLI4	SOLDIER	IA	1.01E	1.01
WTTS2	WATERTOWN (AMRAD)	SD	1.01E	1.01
0134N8	BALDWIN 1W	ND	1.00	1.00
BLNS2	BLUNT 6E	SD	1.00E	1.00
BBLN8	BOWBELLS	ND	1.00	1.00
BWBN8	BOWBELLS 1N	ND	1.00E	1.00
GLKC2	GRAND LAKE 1NW	CO	1.00E	1.00
HDRN1	HADAR #2	NE	1.00E	1.00
HADN1	HADAR 1SE	NE	1.00E	1.00
MRNS2	MAURINE 12SW	SD	1.00	1.00
NEVC2	NEVER SUMMER	CO	1.00	1.00
NOFN1	NORFOLK 2N	NE	1.00E	1.00
SXRI4	SIOUX RAPIDS 4E	IA	1.00E	1.00
SCSC2	STILLWATER CREEK	CO	1.00	1.00

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STDK1	STUDLEY 9NNW	KS	1.00 1.00
BRPK1	BLUE RAPIDS	KS	0.99 1.00
HDKM5	HENDRICKS	MN	0.99E 1.00
OFK	NORFOLK AIRPORT	NE	0.99 1.00
NFKN1	NORFOLK, ELKHORN R	NE	0.99E 1.00
SRMS2	RAMONA	SD	0.99E 1.00
SPOI4	SPENCER, OCHEYEDAN R	IA	0.99 1.00
ADAN1	ADAMS	NE	0.98 0.99
CRBN1	CRAB ORCHARD	NE	0.98E 0.99
ONKS2	ONAKA 2N	SD	0.98E 0.99
SPVN1	SPRINGVIEW	NE	0.98E 0.99
WRVS2	WHITE RIVER	SD	0.98E 0.99
LWRS2	WHITE RIVER 2N	SD	0.98 0.99
WORM5	WORTHINGTON	MN	0.98E 0.99
BINS2	BISON (AMRAD)	SD	0.97E 0.98
BLRK1	BLUE RAPIDS	KS	0.97E 0.98
CLEN1	COLERIDGE	NE	0.97E 0.98
MML	MARSHALL AIRPORT	MN	0.97E 0.98
SPWI4	SPENCER, LTL SIOUX R	IA	0.97E 0.98
ANW	AINSWORTH	NE	0.96E 0.96
BCKN1	BATTLE CREEK	NE	0.96E 0.96
BISS2	BISON	SD	0.96E 0.96
27D	CANBY	MN	0.96E 0.96
CINI4	CARROLL	IA	0.96 0.96
DPRS2	DUPREE 15SSE	SD	0.96E 0.96

GILI4	GILLETTE GROVE	IA	0.96E	0.96
WAWC2	GRANBY 4NNW	CO	0.96E	0.96
RKVI4	ROCK VALLEY, ROCK R	IA	0.96	0.96
SARW4	SARATOGA	WY	0.96E	0.96
SRW4	SARATOGA, N PLATTE R	WY	0.96	0.96
TURS2	TURTON	SD	0.96	0.96
UNGN1	UEHLING	NE	0.96	0.96
BTLN1	BARTLETT 1S	NE	0.95E	0.95
IWDI4	INWOOD	IA	0.95E	0.95
LBNM5	LAKE BENTON	MN	0.95	0.95
LNXS2	LENNOX	SD	0.95E	0.95
PCMI4	MERRILL 6SW	IA	0.95E	0.95
PROS2	PRESHO 7NW	SD	0.95E	0.95
RWF	REDWOOD FALLS	MN	0.95	0.95
GREE007	SPALDING	NE	0.95E	0.95
SPW	SPENCER	IA	0.95	0.95
VALS2	VALLEY SPRINGS	SD	0.95E	0.95
BSWS2	WATERTOWN, BIG SIOUX	SD	0.95E	0.95
BTLI4	BATTLE CREEK 3NE	IA	0.94E	0.94
BPSC2	BERTHOUD PASS	CO	0.94E	0.94
GARF005	BURWELL 20NE	NE	0.94E	0.94
CSAI4	CASTANA EXP FARM	IA	0.94	0.94
DIKI4	DICKENS	IA	0.94E	0.94
UHLN1	UEHLING	NE	0.94E	0.94
RVLS2	RAUVILLE 2S	SD	0.93	0.94
SFHW4	SARATOGA HATCHERY	WY	0.93E	0.94
SPRI4	SPIRIT LAKE	IA	0.93E	0.94
JOHN009	STERLING 3WSW	NE	0.93E	0.94

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SWAN1	SWAN LAKE	NE	0.93E	0.94	
UEHN1	UEHLING, LOGAN CR	NE	0.93E	0.94	
BWLN1	BURWELL	NE	0.92E	0.93	
GLVI4	GALVA	IA	0.92E	0.93	
HOON1	HOOVER	NE	0.92E	0.93	
JRMK1	JEROME 1S	KS	0.92E	0.93	
NOTK1	NORTON 3SW	KS	0.92E	0.93	
TYRN1	TRYON 15NW	NE	0.92E	0.93	
WLTN1	WALTHILL 1E	NE	0.92	0.93	
WHLN1	WALTHILL, S OMAHA CR	NE	0.92E	0.93	
HRLI4	HARLAN 1N	IA	0.91	0.92	
KZBS2	KRANZBURG	SD	0.91E	0.92	
SN0	LENORA	KS	0.91E	0.92	
LENK1	LENORA #2	KS	0.91E	0.92	
LNRK1	LENORA, NF SOLOMON R	KS	0.91	0.92	
LYNN1	LYNCH	NE	0.91	0.92	
LBF	NORTH PLATTE AIRPORT	NE	0.91	0.92	
SHDI4	SHELDON	IA	0.91	0.92	
SHLI4	SHELDON 1N, FLOYD R	IA	0.91E	0.92	
RBXM7	WAYNESVILLE 1W	MO	0.91	0.92	
YKN	YANKTON	SD	0.91E	0.92	
BTSC2	BERTHOUD SUMMIT	CO	0.90	0.90	
DCCS2	CENTRAL CITY	SD	0.90	0.90	

COLS2	COLTON	SD	0.90E	0.90
ECLC2	ECHO LAKE	CO	0.90	0.90
PONS2	ESTELLINE 7W	SD	0.90E	0.90
KAMS2	LAKE KAMPESKA	SD	0.90E	0.90
MCW	MASON CITY AIRPORT	IA	0.90	0.90
OWLS2	RED OWL	SD	0.90E	0.90
RNHW4	RENO HILL	WY	0.90	0.90
VIRN1	VIRGINIA	NE	0.90E	0.90
WWCS2	WATERTOWN 3NE	SD	0.90	0.90
WBSS2	WATERTOWN, BIG SIOUX	SD	0.90	0.90
BRLN1	BURWELL, CALAMUS R	NE	0.89E	0.89
EGNS2	EGAN	SD	0.89E	0.89
FCLN1	FORT CALHOUN 4W	NE	0.89	0.89
GDLC2	GRAND LAKE 6SSW	CO	0.89E	0.89
HLKI4	HAVELOCK	IA	0.89E	0.89
HSTI4	HOLSTEIN	IA	0.89	0.89
LEMI4	LE MARS	IA	0.89E	0.89
AMW	AMES AIRPORT	IA	0.88	0.88
EMLS2	ELM LAKE 4NW	SD	0.88E	0.88
KENS2	KENNEBEC	SD	0.88E	0.88
PSPN1	PONCA STATE PARK	NE	0.88E	0.88
SRBN1	SCRIBNER, PEBBLE CR	NE	0.88E	0.88
EBSS2	EAGLE BUTTE,CHEYENNE	SD	0.87E	0.88
RYLI4	ROYAL	IA	0.87E	0.88
SCRN1	SCRIBNER	NE	0.87E	0.88
SENS2	SENECA	SD	0.87E	0.88
3SE	SPENCER 1N	IA	0.87E	0.88
TYLM5	TYLER	MN	0.87E	0.88
CLNK1	CLAYTON, PRAIRIE DOG	KS	0.86E	0.87
DCTN1	DECATUR, MISSOURI R	NE	0.86E	0.87

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GHOS2	GHOST HAWK LAKE	SD	0.86E	0.87
SHEM001	LITCHFIELD 4N	NE	0.86E	0.87
RNDN1	RANDOLPH 6S	NE	0.86	0.87
LVSS2	SALEM 5NE	SD	0.86	0.87
SHAS2	SHADEHILL RESERVOIR	SD	0.86E	0.87
SHEI4	SHELBY	IA	0.86E	0.87
SPD	SPRINGFIELD	CO	0.86	0.87
OTG	WORTHINGTON AIRPORT	MN	0.86	0.87
WYMN1	WYMORE	NE	0.86E	0.87
ABR	ABERDEEN AIRPORT	SD	0.85	0.86
AMEN1	AMELIA	NE	0.85E	0.86
MRVK1	MARYSVILLE	KS	0.85	0.86
MVLI4	MISSOURI VALLEY 1NNE	IA	0.85E	0.86
RSBS2	ROSEBUD 6N	SD	0.85E	0.86
RHVI4	RUTHVIN	IA	0.85E	0.86
ZVGK1	SCOTT CITY 12SE	KS	0.85E	0.86
SPDN1	SPALDING 5S, CEDAR R	NE	0.85E	0.86
TRNI4	TURIN 4SW, M-H DITCH	IA	0.85E	0.86
BETS2	BETHLEHEM CAVE	SD	0.84E	0.84
BIS	BISMARCK AIRPORT	ND	0.84	0.84
BWDS2	BOWDLE	SD	0.84E	0.84

CROS2	CROCKER 6SW	SD	0.84E	0.84
EXII4	EXIRA	IA	0.84E	0.84
GTYS2	GETTYSBURG 13W	SD	0.84E	0.84
MAYI4	MAY CITY	IA	0.84E	0.84
MYCI4	MAY CITY	IA	0.84E	0.84
MUDS2	MURDO (AMRAD)	SD	0.84E	0.84
TURI4	TURIN, LTL SIOUX R	IA	0.84E	0.84
BOWS2	BOWDLE	SD	0.83E	0.83
LHX	LA JUNTA 4NNE	CO	0.83	0.83
MRLI4	MERRILL, FLOYD R	IA	0.83E	0.83
WTRS2	WATERTOWN, BIG SIOUX	SD	0.83	0.83
ALKC2	ALLENSPARK 2NNW	CO	0.82E	0.82
COAR99	AURORA 4S	CO	0.82	0.82
BAYI4	BAYARD 6SE	IA	0.82E	0.82
FRBN1	FAIRBURY, LTL BLUE R	NE	0.82	0.82
HMRN1	HOMER, OMAHA CR	NE	0.82E	0.82
HOSI4	HOSPERS	IA	0.82E	0.82
NPTN1	NORTH PLATTE	NE	0.82E	0.82
SIXI4	SIOUX CENTER 2SE	IA	0.82E	0.82
TVLS2	TUNERVILLE	SD	0.82E	0.82
FWGC2	WINTER PARK 4SSE	CO	0.82E	0.82
DEAS2	DEADWOOD	SD	0.81E	0.81
GRYS2	GARY 4S	SD	0.81E	0.81
MAPI4	MAPLETON, MAPLE R	IA	0.81E	0.81
PTRI4	PETERSON, LTL SIOUX R	IA	0.81E	0.81
SYCN1	SYRACUSE	NE	0.81	0.81
AROC2	ARROW	CO	0.80	0.81
COPC2	COPELAND LAKE	CO	0.80	0.81
DDZM7	DADEVILLE GDDS	MO	0.80E	0.81
DDVM7	DADEVILLE, SAC R	MO	0.80	0.81
GARS2	GARRETSON	SD	0.80E	0.81
GZPC2	GRIZZLY PEAK	CO	0.80	0.81

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LEXN1	LEXINGTON	NE	0.80	0.81
LBAC2	LOVELAND BASIN	CO	0.80	0.81
OKYK1	OAKLEY, SMOKY HILL R	KS	0.80E	0.81
UVCC2	UNIVERSITY CAMP	CO	0.80	0.81
WPTN1	WEST POINT	NE	0.80	0.81
WHEE001	BARTLETT 9NW	NE	0.79E	0.80
BDDN1	BARTLEY 4SSW	NE	0.79E	0.80
BRGS2	BRIDGEWATER	SD	0.79E	0.80
CLKS2	CLEAR LAKE	SD	0.79	0.80
CBRN1	CULBERTSON	NE	0.79	0.80
HSGS2	DEADWOOD	SD	0.79E	0.80
MWM	GOODLAND	KS	0.79E	0.80
PERK018	GRANT 8WSW	NE	0.79E	0.80
IDGI4	IDA GROVE 5NW	IA	0.79E	0.80
PINS2	INTERIOR 15SW RAWS	SD	0.79E	0.80
MPTI4	MAPLETON #2	IA	0.79E	0.80
OVTN1	OVERTON 3W, PLATTE R	NE	0.79E	0.80
PNDN1	PENDER	NE	0.79E	0.80
QNTK1	QUINTER	KS	0.79E	0.80

QTRK1	QUINTER	KS	0.79	0.80
RAGN1	RAGAN	NE	0.79E	0.80
WPNN1	WEST POINT, ELKHORN R	NE	0.79E	0.80
AGAS2	AGAR 3N	SD	0.78E	0.78
BARN1	BARNESTON, BIG BLUE	NE	0.78E	0.78
BXCW4	BOXELDER, BOXELDER C	WY	0.78E	0.78
CDRS2	CEDAR BUTTE 1NE	SD	0.78E	0.78
FABN1	FAIRBURY 5S	NE	0.78E	0.78
HBCN1	HAIGLER, BUFFALO CR	NE	0.78	0.78
NEDC2	NEDERLAND 5NNW	CO	0.78E	0.78
PEDN1	PENDER, LOGAN CR	NE	0.78E	0.78
STPS2	STEPHAN 2NW	SD	0.78E	0.78
WAKS2	WAKPALA	SD	0.78E	0.78
CTTS2	COTTONWOOD, SF BAD R	SD	0.77	0.77
CULN1	CULBERTSON	NE	0.77E	0.77
KIGN1	KILGORE 1NE	NE	0.77E	0.77
LMRN1	LAMAR 3SSE	NE	0.77E	0.77
NIWC2	NIWOT	CO	0.77E	0.77
NORN1	NORDEN 6S	NE	0.77E	0.77
RALS2	RAUVILLE 2W	SD	0.77E	0.77
RAVN1	RAVENNA	NE	0.77E	0.77
RVNN1	RAVENNA, SO LOUP R	NE	0.77E	0.77
RIVN1	RIVERDALE, WOOD R	NE	0.77E	0.77
CRFN1	CROFTON	NE	0.76E	0.76
FRUC2	FRASER 10SE	CO	0.76E	0.76
GLNS2	GALENA, BEAR BUTTE C	SD	0.76E	0.76
MVDM5	MONTEVIDEO	MN	0.76E	0.76
KSNT2	NORTON 1E	KS	0.76E	0.76
SELK1	SELDEN 11NW	KS	0.76E	0.76
STJN1	ST JAMES	NE	0.76E	0.76
TWBS2	TWIN BROOKS 4W	SD	0.76	0.76
KDNS2	ABERDEEN 6SE	SD	0.75E	0.75
GALS2	GALENA	SD	0.75E	0.75
LUVN5	LUVERNE, ROCK R	MN	0.75E	0.75

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MRFS2	MADISON 2SE	SD	0.75E	0.75
MIW	MARSHALLTOWN AIRPORT	IA	0.75	0.75
DEOI4	MISSOURI VALLEY 10W	IA	0.75	0.75
HOLT008	PAGE 5WNW	NE	0.75E	0.75
WICC2	RAND 7SW RAW	CO	0.75	0.75
HCKN8	BISMARCK, HAY CREEK	ND	0.74E	0.75
CLBS2	COLUMBIA 1W	SD	0.74	0.75
CWDS2	COTTONWOOD 2E	SD	0.74	0.75
FRAC2	FRASER 6W	CO	0.74E	0.75
MNKN8	MENOKEN 2WNW	ND	0.74E	0.75
MTRS2	MONTROSE 8N	SD	0.74E	0.75
NTDK1	NORTON DAM	KS	0.74E	0.75
NOOK1	NORTON DAM	KS	0.74	0.75
PALN1	PALISADE, FRENCHMAN	NE	0.74	0.75
WHEE002	BARTLETT 9NE	NE	0.73E	0.74
BLAN1	BLAIR 2E, MISSOURI R	NE	0.73E	0.74
MIES2	MILLER 10S	SD	0.73E	0.74

NPAN1	NORTH PLATTE 10S	NE	0.73E	0.74
CMBS2	COLUMBIA 1S, JAMES R	SD	0.72E	0.73
FOSI4	FOSTORIA	IA	0.72E	0.73
STEN1	HAIGLER, NF REPUB R	NE	0.72E	0.73
KNMN8	KENMARE 1WSW	ND	0.72E	0.73
LSTI4	LESTER	IA	0.72E	0.73
OMA	OMAHA EPPLEY FIELD	NE	0.72	0.73
DVSS2	DAVIS, VERMILLION R	SD	0.71E	0.71
ERIK1	ERIE	KS	0.71	0.71
GEMK1	GEM	KS	0.71E	0.71
HAWI4	HAWARDEN, BIG SIOUX R	IA	0.71E	0.71
HPWS2	MISSION RIDGE 3NW	SD	0.71E	0.71
MONS2	MONTROSE	SD	0.71E	0.71
NPLN1	NO PLATTE EXP FARM	NE	0.71	0.71
OFF	OFFUTT FIELD	NE	0.71	0.71
ONLN1	ONEILL	NE	0.71	0.71
TEKN1	TEKAMAH	NE	0.71E	0.71
WKPS2	WAKPALA	SD	0.71E	0.71
WPTS2	WESTPORT	SD	0.71	0.71
ALTI4	ALTON, FLOYD R	IA	0.70E	0.70
ARPC2	ARAPAHO RIDGE	CO	0.70	0.70
BLKC2	BEAR LAKE	CO	0.70	0.70
ELRC2	ELK RIVER #2	CO	0.70	0.70
JWRC2	JOE WRIGHT	CO	0.70	0.70
JNPC2	JONES PASS	CO	0.70	0.70
LEAS2	LEAD	SD	0.70E	0.70
ORCI4	ORANGE CITY	IA	0.70	0.70
PANI4	PANORA	IA	0.70E	0.70
PHTC2	PHANTOM VALLEY	CO	0.70	0.70
PRCN1	PIERCE 2SE	NE	0.70E	0.70
STPN1	ST PAUL 4N	NE	0.70	0.70
WAYM7	WAYNESVILLE 5W	MO	0.70E	0.70
WETS2	WETONKA 7S	SD	0.70E	0.70
WLLC2	WILLOW CREEK PASS	CO	0.70	0.70
APHC2	ARAPAHOE	CO	0.69E	0.69
BISN8	BISMARCK 7N	ND	0.69E	0.69

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EDSM7	ELDORADO SPRINGS	MO	0.69	0.69
PULI4	PAULLINA	IA	0.69E	0.69
SPUN1	ST PAUL, NORTH LOUP	NE	0.69E	0.69
ADAI4	ADAIR 2NNW	IA	0.68E	0.69
WBCS2	DEADWOOD 2NE	SD	0.68E	0.69
DMX	DES MOINES WFO	IA	0.68E	0.69
GTHI4	GUTHRIE CENTER	IA	0.68	0.69
SHIM5	HILLS	MN	0.68E	0.69
MDWN1	MEADOW GROVE	NE	0.68E	0.69
NRCK1	NORCATUR 3WSW	KS	0.68E	0.69
PAIN1	PALISADE	NE	0.68	0.69
RKRI4	ROCK RAPIDS	IA	0.68E	0.69
SFDS2	STRATFORD, JAMES R	SD	0.68E	0.69
TCMN1	TECUMSEH	NE	0.68E	0.69
WSTS2	WESTPORT 3SE	SD	0.68E	0.69

0126N8	WILTON 7NE	ND	0.68E	0.69
APKC2	ALLENSPARK 1NW	CO	0.67E	0.68
BURN1	BURCHARD	NE	0.67E	0.68
CNDS2	CONDE	SD	0.67E	0.68
LKPI4	LAKE PARK	IA	0.67E	0.68
LEBI4	LEBANON 4SE	IA	0.67E	0.68
PIRN1	PIERCE #1	NE	0.67	0.68
ZVHK1	SCOTT CITY	KS	0.67	0.68
ZVIK1	SCOTT CITY 14WNW	KS	0.67E	0.68
ATHS2	ATHOL, SF SNAKE CR	SD	0.66E	0.67
CCAS2	AVON 6SW	SD	0.66E	0.67
TBN	FORT LEONARD WOOD	MO	0.66	0.67
FCKN1	FT CROOK, PAPILLION	NE	0.66E	0.67
GIRK1	GIRARD	KS	0.66	0.67
MCDK1	MCDONALD	KS	0.66E	0.67
UPDN1	UPLAND 4NE	NE	0.66E	0.67
RANS2	VEBLEN 5W	SD	0.66E	0.67
WHIS2	WHITEHORSE, MOREAU R	SD	0.66E	0.67
WIFC2	WILLIAMS FORK DAM	CO	0.66E	0.67
ATLI4	ATLANTIC 1NE	IA	0.65	0.65
BLON1	BLOOMFIELD	NE	0.65	0.65
MESN8	MANDAN EXP STATION	ND	0.65E	0.65
MASN1	MASON CITY	NE	0.65	0.65
MINS2	MINA (MINA LAKE)	SD	0.65E	0.65
BUDS2	ROSEBUD LAKE	SD	0.65E	0.65
SBYS2	SELBY	SD	0.65E	0.65
SOSS2	SOUTH SHORE 8W	SD	0.65	0.65
UNDI4	UNDERWOOD	IA	0.65E	0.65
UNIS2	UNION CENTER	SD	0.65E	0.65
WHTI4	WASHTA	IA	0.65E	0.65
BTHS2	BATH 1NE	SD	0.64E	0.64
BNTN1	BENNINGTON 3WSW	NE	0.64	0.64
COKN1	COOK	NE	0.64E	0.64
DSM	DES MOINES	IA	0.64	0.64
EMMI4	EMMETSBURG	IA	0.64	0.64
MVNS2	MARVIN 9SW	SD	0.64E	0.64
0517N8	ST ANTHONY 7NE	ND	0.64E	0.64
BABC2	WARD 3NNW, BEAVER CR	CO	0.64E	0.64

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ATCI4	ATLANTIC 5SW, E NISH	IA	0.63E	0.63
COAR177	AURORA 4SSE	CO	0.63E	0.63
KSCR2	CHEROKEE	KS	0.63E	0.63
FTMS2	FORT MEADE	SD	0.63E	0.63
FSTK1	FOSTORIA 7NW	KS	0.63E	0.63
LAUN1	LAUREL	NE	0.63E	0.63
LKWM7	LOCKWOOD	MO	0.63	0.63
MLTK1	MILTONVALE	KS	0.63	0.63
MRLK1	MORLAND 2N	KS	0.63E	0.63
NEOI4	NEOLA	IA	0.63E	0.63
VVV	ORTONVILLE	MN	0.63E	0.63
OTON1	OTOE	NE	0.63E	0.63
CHCS2	PLAINVIEW, CHERRY CR	SD	0.63E	0.63

SHLN1	SHELBY 3NE	NE	0.63	0.63
TQE	TEKAMAH	NE	0.63	0.63
UPLN1	UPLAND	NE	0.63E	0.63
ANTI4	ANTHON 3E	IA	0.62E	0.63
BNLN1	BROWNLEE	NE	0.62E	0.63
OABK1	COLLYER	KS	0.62E	0.63
RED_013	DANBURY 1W	NE	0.62E	0.63
FLOS2	FLORENCE, BIG SIOUX	SD	0.62E	0.63
HAIN1	HAIGLER, ARIKAREE R	NE	0.62E	0.63
NCKN1	NICKERSON 3NE	NE	0.62E	0.63
VRPS2	PARKER, EAST FORK	SD	0.62	0.63
PTSK1	PITTSBURG	KS	0.62	0.63
JOHN005	STERLING 3ESE	NE	0.62E	0.63
VRFN1	VALENTINE 27SSE RAW	NE	0.62E	0.63
CUST015	ANSELMO 9NW	NE	0.61E	0.62
BEAN1	BEATRICE	NE	0.61E	0.62
BNSI4	BRONSON	IA	0.61E	0.62
CSTI4	CRESCENT	IA	0.61E	0.62
DEN	DENVER INTL AIRPORT	CO	0.61	0.62
EDIN1	EDISON 2E, TURKEY CR	NE	0.61E	0.62
FRZC2	FRASER	CO	0.61E	0.62
HITI4	HONEY CREEK 1SE	IA	0.61	0.62
JLN	JOPLIN	MO	0.61	0.62
MAHS2	MAHTO	SD	0.61E	0.62
FSNN1	OMAHA AIRPORT	NE	0.61E	0.62
PPLN1	PAPILLION	NE	0.61	0.62
PWBN1	PAPILLION #2	NE	0.61E	0.62
WNSI4	RIVERTON, WEST NISH	IA	0.61	0.62
TOLS2	TOLSTOY 6N	SD	0.61E	0.62
VIH	VICHY/ROLLA NATL AP	MO	0.61	0.62
WCOM7	WACO 2E	MO	0.61E	0.62
WAGS2	WAGNER	SD	0.61E	0.62
WTON1	WATERLOO	NE	0.61E	0.62
AFCS2	ABERDEEN, FOOT CR	SD	0.60	0.61
BIWN8	BISMARCK, MISSOURI R	ND	0.60E	0.61
BLRN1	BLAIR	NE	0.60E	0.61
CPMC2	COPPER MOUNTAIN	CO	0.60	0.61
CFTN1	CROFTON 8N	NE	0.60E	0.61
RCA	ELLSWORTH AFB	SD	0.60	0.61
GPDN1	GAVINS PT DAM	NE	0.60E	0.61

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GRGI4	GEORGE	IA	0.60E	0.61
GDYC2	GLENDEVEY	CO	0.60E	0.61
KLNC2	KILN	CO	0.60	0.61
LELC2	LAKE ELDORA	CO	0.60	0.61
LKIC2	LAKE IRENE	CO	0.60	0.61
MANN8	MANDAN, MISSOURI R	ND	0.60E	0.61
ONAI4	ONAWA	IA	0.60	0.61
PCFI4	PACIFIC JUNCTION	IA	0.60	0.61
PLKK1	POMONA DAM GDSS	KS	0.60	0.61
QUEK1	QUEÑEMO 5NW	KS	0.60E	0.61
ROAC2	ROACH	CO	0.60	0.61

SNLW4	SAND LAKE	WY	0.60	0.61
GRAS2	SHADEHILL, NF GRAND	SD	0.60E	0.61
TAD	TRINIDAD	CO	0.60E	0.61
WLB1	WILBER, TURKEY CR	NE	0.60	0.61
YTNN1	YUTAN	NE	0.60E	0.61
RICS2	ABERDEEN 9NW	SD	0.59E	0.59
ASHM7	ASH GROVE 3N	MO	0.59E	0.59
ELMN1	ELM CREEK 1SSW	NE	0.59E	0.59
ELLN1	ELSMERE 9ENE	NE	0.59E	0.59
FRES2	FREEMAN	SD	0.59E	0.59
ISAS2	ISABEL	SD	0.59E	0.59
LOWS2	LOWRY	SD	0.59E	0.59
MCKN1	MCCOOK, DRIFTWOOD CR	NE	0.59E	0.59
PWDN8	PAINTED WOODS CR	ND	0.59E	0.59
PLCN1	PLATTE CENTER	NE	0.59E	0.59
SOWN1	SOWDERS RANCH	NE	0.59E	0.59
TILN1	TILDEN	NE	0.59E	0.59
TULS2	TULARE, TURTLE CR	SD	0.59E	0.59
WRAC2	WRAY	CO	0.59E	0.59
ADIM7	ALDRICH 3WSW	MO	0.58E	0.58
OXDC2	AURORA 7SSE AMRAD	CO	0.58E	0.58
CHLS2	CHELSEA	SD	0.58E	0.58
EDSN1	EDISON	NE	0.58E	0.58
GLDM7	GOLDEN CITY 6S	MO	0.58	0.58
CSFC2	GOULD 4SE	CO	0.58E	0.58
HSKN1	HOSKINS	NE	0.58E	0.58
MDNN8	MANDAN 3W, HEART R	ND	0.58E	0.58
MRYK1	MARYSVILLE, BIG BLUE	KS	0.58	0.58
MTAI4	MOUNT AYR	IA	0.58	0.58
RNDC2	RAND	CO	0.58E	0.58
RANC2	RAND AMRAD	CO	0.58E	0.58
ENSI4	RIVERTON, EAST NISH	IA	0.58	0.58
SRGN1	SARGENT	NE	0.58E	0.58
BVCN1	BEAVER CITY	NE	0.57	0.57
BELN1	BELLVUE	NE	0.57E	0.57
CBYN8	CROSBY	ND	0.57E	0.57
FTCN1	FORT CALHOUN	NE	0.57E	0.57
GRDK1	GRIDLEY	KS	0.57	0.57
LNNI4	LINN GROVE	IA	0.57E	0.57
LOCM7	LOCKWOOD 3NW	MO	0.57E	0.57
MSNI4	MASSENA	IA	0.57	0.57
NKR1	NICKERSON, MAPLE CR	NE	0.57E	0.57

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ID	DESCRIPTION	STATE	06/21	PERIOD SUM
IRIS2	RAPID CITY 6W	SD	0.57	0.57
EKCS2	RAPID CITY, ELK CR	SD	0.57E	0.57
SDRW4	SAND LAKE RESERVOIR	WY	0.57E	0.57
SPNN1	SPRINGFIELD 7E	NE	0.57E	0.57
SPLN1	ST PAUL #2 MID LOUP	NE	0.57E	0.57
VRNS2	VERMILLION	SD	0.57E	0.57
SVMS2	VERMILLION STORMNET	SD	0.57E	0.57
YANS2	YANKTON, MISSOURI R	SD	0.57E	0.57
ZNAS2	ZEONA 10SSW	SD	0.57E	0.57

BLMI4	BLOOMFIELD 1WNW	IA	0.56	0.56
CSLS2	CASTLEWOOD	SD	0.56E	0.56
CSWS2	CASTLEWOOD,BIG SIOUX	SD	0.56	0.56
CETS2	CENTERVILLE 4N	SD	0.56E	0.56
FLKK1	FARLINGTON	KS	0.56E	0.56
GLEI4	GLENWOOD 3SW	IA	0.56E	0.56
HRTM7	HARTVILLE	MO	0.56	0.56
PGHI4	PRIMGHAR	IA	0.56E	0.56
CHYK1	SAINT FRANCIS	KS	0.56E	0.56
SYF	ST FRANCIS	KS	0.56E	0.56
SFCK1	ST FRANCIS	KS	0.56E	0.56
WFDC2	WILLIAMS FORK DAM	CO	0.56E	0.56
YTNS2	YANKTON 2E	SD	0.56	0.56
BRCN1	BEATRICE 1N	NE	0.55	0.56
BMKN8	BISMARCK 5NNW	ND	0.55	0.56
DOOI4	DOON 4ENE	IA	0.55E	0.56
DUNN1	DUNBAR 4N	NE	0.55E	0.56
EAGC2	EAGLECREST	CO	0.55E	0.56
KDKC2	ELDORA 3W AMRAD	CO	0.55E	0.56
JEFF002	FAIRBURY 9WSW	NE	0.55E	0.56
FKFK1	FRANKFORT, BLACK VERM	KS	0.55E	0.56
GRAN1	GRETNA 4NE	NE	0.55	0.56
IOAK1	IOLA 1W	KS	0.55	0.56
LRRM7	LAMAR	MO	0.55E	0.56
LAMM7	LAMAR	MO	0.55E	0.56
ANNS2	LEAD 6SW, ANNIE CR	SD	0.55	0.56
MOT	MINOT INTL AIRPORT	ND	0.55	0.56
OBEK1	OBERLIN	KS	0.55E	0.56
ORDS2	ORDWAY 1S, ELM R	SD	0.55E	0.56
PTMN1	PLATTSMOUTH 1E	NE	0.55E	0.56
RAPI4	ROCK RAPIDS, ROCK R	IA	0.55E	0.56
SPFN1	SPRINGFIELD	NE	0.55E	0.56
9V2	TRENTON DAM 8SSW	NE	0.55E	0.56
WTCK1	WHITE CITY	KS	0.55	0.56
BIE	BEATRICE #1	NE	0.54E	0.55
BEGN1	BENNINGTON 3E	NE	0.54E	0.55
IRLN1	IRVINGTON 4NW	NE	0.54E	0.55
LRAM7	LAMAR 6N	MO	0.54E	0.55
NEVM7	NEVADA WATER PLANT	MO	0.54	0.55
OBRK1	OBERLIN	KS	0.54	0.55
OBNK1	OBERLIN, SAPPA CR	KS	0.54E	0.55
HOLT009	PAGE	NE	0.54E	0.55
PIER008	PIERCE 9W	NE	0.54E	0.55
JHNS2	RAPID CITY 11W	SD	0.54	0.55

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MCCN1	RED WILLOW DAM	NE	0.54E	0.55
RHC2	ROACH	CO	0.54E	0.55
ATLN1	ATLANTA 2WNW	NE	0.53E	0.53
PIPS2	BELVIDERE 6SE	SD	0.53	0.53
FRKK1	FRANKFORT	KS	0.53E	0.53
FLTN1	FULLERTON	NE	0.53	0.53
GIBN1	GIBBON	NE	0.53E	0.53

RTLS2	HIGHMORE 22N	SD	0.53E	0.53
JSDS2	JOHNSON SIDING	SD	0.53E	0.53
LYMI4	LYMAN	IA	0.53E	0.53
LNDK1	LYNDON 3ENE	KS	0.53E	0.53
LYDK1	LYNDON 3ENE	KS	0.53E	0.53
MCXN1	MCCOOK	NE	0.53	0.53
KSCR1	PITTSBURG 1WSW	KS	0.53E	0.53
RULN1	RULO	NE	0.53E	0.53
RUON1	RULO 2W	NE	0.53	0.53
TTNN1	TRENTON DAM	NE	0.53	0.53
UTCK1	UTICA	KS	0.53	0.53
WISN1	WISNER	NE	0.53E	0.53
ABON1	ALBION 7W	NE	0.52E	0.52
CUST014	ANSELMO 12WSW	NE	0.52E	0.52
BRAN1	BRADY 1S	NE	0.52E	0.52
BDYN1	BRADY, PLATTE R	NE	0.52E	0.52
CRYC2	CHERRY CREEK DAM	CO	0.52E	0.52
CFTK1	CLIFTON	KS	0.52	0.52
CLIK1	CLINTON RESERVOIR	KS	0.52	0.52
CCCS2	CUSTER CROSSING CAMP	SD	0.52E	0.52
EPIC2	EMPIRE	CO	0.52E	0.52
FNB	FALLS CITY 2NE	NE	0.52	0.52
FLLN1	FALLS CITY 2NE	NE	0.52E	0.52
FIRN1	FIRTH	NE	0.52E	0.52
0190N8	FORBES 4NE	ND	0.52E	0.52
GLDC2	GOLDEN	CO	0.52E	0.52
FRAN002	HILDRETH 5SSE	NE	0.52E	0.52
LAWK1	LAWRENCE, WAKARUSA R	KS	0.52	0.52
LERK1	LE ROY	KS	0.52E	0.52
LRK1	LEROY	KS	0.52E	0.52
LESN1	LESHARA, PLATTE R	NE	0.52E	0.52
MCON1	MCCOOK #2	NE	0.52E	0.52
OAKI4	OAKLAND	IA	0.52E	0.52
ZVFK1	SCOTT CITY 10NE	KS	0.52E	0.52
SMTS2	SUMMIT	SD	0.52E	0.52
WAYN1	WAYNE 4NW	NE	0.52E	0.52
WEEK1	WHEELER 8S	KS	0.52E	0.52
WMTS2	WILMOT 1ENE	SD	0.52	0.52
WRYC2	WRAY	CO	0.52E	0.52
ATWK1	ATWOOD 8SSE	KS	0.51E	0.51
MOMS1	BELLE 5SSW	MO	0.51E	0.51
EMSS2	ELM SPRINGS 4NW	SD	0.51E	0.51
FLMM7	FLEMINGTON 3E	MO	0.51	0.51
HARM7	HARTVILLE 7NW	MO	0.51E	0.51
KENI4	KENNEBEC, LTL SIOUX	IA	0.51	0.51
BGOS2	MILESVILLE 9N	SD	0.51E	0.51

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HITN1	OMAHA (HITCHCOCK PK)	NE	0.51E	0.51
OTOE002	PALMYRA 7SSE	NE	0.51E	0.51
PMNK1	POMONA 2S	KS	0.51E	0.51
RAP	RAPID CITY	SD	0.51	0.51
REMI4	REMSEN	IA	0.51E	0.51

RMSI4	REMPEN #2	IA	0.51	0.51
WLNK1	WALNUT 3S	KS	0.51E	0.51
WORK1	WORDEN	KS	0.51E	0.51
EGDC2	CHERRY CREEK DAM	CO	0.50	0.50
CNYK1	COLONY	KS	0.50E	0.50
DDMC2	DEADMAN HILL	CO	0.50	0.50
DELS2	DELL RAPIDS	SD	0.50E	0.50
ESDM7	EDWARDS 6W	MO	0.50	0.50
ELCS2	ELM SPRINGS, ELK CR	SD	0.50	0.50
FFDS2	FREDERICK	SD	0.50E	0.50
GTTS2	GETTYSBURG	SD	0.50E	0.50
COJF40	GOLDEN 1NW	CO	0.50E	0.50
GLNC2	GOLDEN GDDS	CO	0.50	0.50
GRTN1	GRETNA 3ESE	NE	0.50E	0.50
MIHC2	JEFFERSON 10SE	CO	0.50	0.50
JERM7	JERICO SPRINGS 3S	MO	0.50	0.50
KDAS2	KADOKA	SD	0.50E	0.50
LSCN1	LINCOLN 7NW, SALT CR	NE	0.50	0.50
MRRM7	MORRISVILLE, LTL SAC	MO	0.50	0.50
OVVK1	OVERBROOK 7SE	KS	0.50E	0.50
OXFN1	OXFORD 6NNW	NE	0.50	0.50
PITM7	PITTSBURG 4W	MO	0.50	0.50
ERVW4	RIVERSIDE	WY	0.50E	0.50
SCNS2	SCENIC, CHEYENNE R	SD	0.50	0.50
SHPK1	SHARPE 3E	KS	0.50	0.50
SFHS2	SPEARFISH CREEK	SD	0.50E	0.50
SUMC2	SUMMIT RANCH	CO	0.50	0.50
WALK1	WALNUT 2NNE	KS	0.50E	0.50
WYNN1	WAYNE	NE	0.50E	0.50
WBSW4	WEBBER SPRINGS	WY	0.50	0.50
WTPC2	WINTER PARK	CO	0.50E	0.50
WLHN1	WOLBACH	NE	0.50	0.50
EMRN1	EMERSON	NE	0.49E	0.50
HLC	HILL CITY	KS	0.49	0.50
JANN1	JANSEN	NE	0.49E	0.50
KEBN1	KENNARD 2SE	NE	0.49E	0.50
IAB	MCCONNELL AFB	KS	0.49	0.50
MOKN1	MCCOOK 17NNW	NE	0.49E	0.50
MSZM7	MORRISVILLE, LTL SAC	MO	0.49E	0.50
NVDM7	NEVADA, MARMATON R	MO	0.49E	0.50
PSMM7	PITTSBURG 4WSW	MO	0.49E	0.50
PTCN1	PLATTE CENTER	NE	0.49E	0.50
STPK1	ST PETER 4ENE	KS	0.49E	0.50
SRPN1	SURPRISE, BIG BLUE R	NE	0.49E	0.50
TLKS2	TIMBER LAKE	SD	0.49E	0.50
WLBK1	WILLIAMSBURG	KS	0.49E	0.50
ALPS2	ALPENA, SAND CR	SD	0.48E	0.48
CWCC2	EMPIRE 2SE, CLEAR CR	CO	0.48E	0.48

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FNCK1	FRONTENAC	KS	0.48E 0.48
KEYC2	KEYSTONE 7ESE	CO	0.48E 0.48
MALI4	MALVERN	IA	0.48E 0.48

NBDN1	NORTH BEND, PLATTE R	NE	0.48E	0.48
OZMN1	OSMOND	NE	0.48E	0.48
ZRSK1	UTICA 4NE	KS	0.48E	0.48
ASGM7	ASH GROVE 4S	MO	0.47	0.47
ASEM7	ASH GROVE 4S	MO	0.47E	0.47
ATKN1	ATKINSON 3SW	NE	0.47E	0.47
BEAK1	BEATTIE 2NNW	KS	0.47	0.47
BFTS2	BRENTFORD	SD	0.47E	0.47
BRK1	BURLINGTON	KS	0.47E	0.47
JRLK1	BURLINGTON 3N	KS	0.47E	0.47
CSBM7	COSBY 2W	MO	0.47	0.47
ELMS2	ELM SPRINGS 3ESE	SD	0.47E	0.47
HNKI4	HANCOCK, WEST NISH	IA	0.47E	0.47
HLTK1	HOLTON	KS	0.47	0.47
MRNK1	MORAN	KS	0.47E	0.47
NMOS2	NEMO 1SW	SD	0.47E	0.47
SNBI4	SANBORN	IA	0.47E	0.47
LINC027	STAPLETON 8SSE	NE	0.47E	0.47
WRNS2	WARNER	SD	0.47E	0.47
WILK1	WILSEY	KS	0.47	0.47
BTPS2	BUFFALO TRADING POST	SD	0.46E	0.47
HRSN1	CHADRON 6S RAWS	NE	0.46	0.47
CLYK1	COLLYER 10S	KS	0.46	0.47
EKWN1	ELKHORN 1NW	NE	0.46E	0.47
HRBN1	HARBINE 1WSW	NE	0.46E	0.47
HICK1	HILL CITY	KS	0.46E	0.47
HLCK1	HILL CITY #2	KS	0.46E	0.47
HLLK1	HILL CITY 1E	KS	0.46	0.47
LIC	LIMON	CO	0.46	0.47
MLVK1	MELVERN DAM 1E	KS	0.46E	0.47
CUST021	MERNA 11W	NE	0.46E	0.47
ENES2	MITCHELL, ENEMY CR	SD	0.46E	0.47
MOVI4	MOVILLE	IA	0.46E	0.47
OTM	OTTUMWA	IA	0.46	0.47
RAVS2	RAPID CITY 11SW	SD	0.46E	0.47
HCGS2	RAPID CITY 8W	SD	0.46E	0.47
SIDI4	SIDNEY	IA	0.46	0.47
UTCN1	UTICA	NE	0.46	0.47
PERK005	VENANGO	NE	0.46E	0.47
WAKN1	WAKEFIELD	NE	0.46	0.47
AVNS2	AVON	SD	0.45E	0.45
BREC2	BRECKENRIDGE 3N	CO	0.45E	0.45
CHES2	CHESTER 2N	SD	0.45E	0.45
GLNI4	GLENWOOD	IA	0.45	0.45
GSBN1	GRETNA 3NE	NE	0.45E	0.45
HBGI4	HAMBURG #2	IA	0.45E	0.45
HMBI4	HAMBURG, NISHNABOTNA	IA	0.45	0.45
HAYN1	HAYES CENTER 1NW	NE	0.45	0.45
HOPM7	HOPKINS	MO	0.45	0.45
EAR	KEARNEY	NE	0.45E	0.45

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KNGN1	KINGSLEY DAM	NE	0.45

LCNN1	LINCOLN, SALT CR	NE	0.45	0.45
MKRN1	MCCOOK, REPUBLICAN R	NE	0.45E	0.45
MVNK1	MELVERN 2W	KS	0.45E	0.45
NCRK1	NORCATUR, SAPPA CR	KS	0.45	0.45
OMHN1	OMAHA, MISSOURI R	NE	0.45E	0.45
OSMN1	OSMOND	NE	0.45E	0.45
PNVS2	PLAINVIEW 6SSW	SD	0.45E	0.45
HRMM7	POMME DE TERRE DAM	MO	0.45	0.45
PTXM7	POMME DE TERRE RES	MO	0.45E	0.45
EROS2	SIOUX FALLS 14NE	SD	0.45E	0.45
TLRN1	TAYLOR 12NE	NE	0.45E	0.45
VBVS2	VICTORIA DAM	SD	0.45	0.45
AAO	WICHITA	KS	0.45E	0.45
ANSN1	ANSELMO 2SE	NE	0.44	0.44
ACDK1	ARCADIA	KS	0.44E	0.44
CPTS2	CAPUTA 1SW	SD	0.44E	0.44
CLMC2	CLIMAX 4W	CO	0.44E	0.44
BURT002	CRAIG 6S	NE	0.44E	0.44
TBNM7	FORT LEONARD WOOD	MO	0.44E	0.44
FMTC2	FREMONT PASS	CO	0.44E	0.44
GBBN1	GIBBON 3ENE, WOOD R	NE	0.44E	0.44
GLCS2	GLENCROSS	SD	0.44E	0.44
GRNI4	GREENFIELD	IA	0.44E	0.44
REPN1	HARLAN COUNTY DAM	NE	0.44E	0.44
LARK1	LAWRENCE	KS	0.44E	0.44
LOAM7	LEBANON 9E	MO	0.44E	0.44
LUSN1	LINCOLN 3S, SALT C	NE	0.44	0.44
LDLK1	LUDELL, BEAVER CR	KS	0.44E	0.44
PPF	PARSONS AIRPORT	KS	0.44E	0.44
PSTM7	PRESTON 4W	MO	0.44E	0.44
RANI4	RANDOLPH	IA	0.44E	0.44
RDPI4	RANDOLPH 1W, W NISH	IA	0.44E	0.44
RDPK1	RANDOLPH, FANCY CR	KS	0.44E	0.44
RAUS2	RAUVILLE 2N, MUD CR	SD	0.44	0.44
SDHI4	SHENANDOAH	IA	0.44	0.44
SPRS2	SPEARFISH (AMRAD)	SD	0.44E	0.44
STBM8	STEAMBOAT RAWS	MT	0.44	0.44
TBLN1	TABLE ROCK 4N	NE	0.44E	0.44
WETK1	WETMORE	KS	0.44E	0.44
AWDK1	ATWOOD	KS	0.43E	0.44
BLYK1	BAILEYVILLE	KS	0.43	0.44
BERN1	BERTRAND	NE	0.43E	0.44
BLIN1	BLAIR 5WNW	NE	0.43E	0.44
BLAM7	BOLIVAR 13N	MO	0.43E	0.44
0581N8	CENTER 1E	ND	0.43E	0.44
CORM7	CORNING	MO	0.43E	0.44
EONK1	EASTON	KS	0.43	0.44
ESTK1	EASTON, STRANGER CR	KS	0.43E	0.44
EFFK1	EFFINGHAM	KS	0.43	0.44
JEFF006	FAIRBURY 8NNW	NE	0.43E	0.44
GROS2	GROTON	SD	0.43E	0.44
GOVM7	GROVESPRING 5S	MO	0.43E	0.44

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HGSC2	HAGERMAN TUNNEL	CO	0.43E	0.44
K87	HIAWATHA 5SSE	KS	0.43E	0.44
4LJ	LAMAR	CO	0.43E	0.44
LNIN1	LINCOLN FIRE STA 11	NE	0.43E	0.44
OKAS2	OKATON	SD	0.43E	0.44
ORUN1	ORUM	NE	0.43E	0.44
PLTN1	PLATTSMOUTH 1E	NE	0.43E	0.44
RABN1	RALSTON	NE	0.43E	0.44
RDHK1	RANDOLPH 4WNW	KS	0.43E	0.44
VAVS2	RAPID CITY 11W	SD	0.43E	0.44
SLMN1	SALEM 5SW	NE	0.43E	0.44
UION1	UNION, WEEPING WATER	NE	0.43E	0.44
WEEN1	WEEPING WATER 3N	NE	0.43E	0.44
ARMS2	ARMOUR	SD	0.42E	0.42
ATDK1	ATWOOD	KS	0.42	0.42
CLXC2	CLIMAX	CO	0.42E	0.42
CLDK1	CLYDE, ELK CR	KS	0.42E	0.42
CTMM7	CROSS TIMBERS 2N	MO	0.42E	0.42
FORN8	FORBES 10NW	ND	0.42E	0.42
GOFK1	GOFF 3WSW	KS	0.42	0.42
COPH33	HOLYOKE 13SE	CO	0.42E	0.42
HRTK1	HORTON	KS	0.42E	0.42
IMO14	IMOGENE 3N	IA	0.42E	0.42
INTS2	INTERIOR 3NE	SD	0.42E	0.42
KRLS2	KIRLEY 6N	SD	0.42E	0.42
OLDW4	OLD BATTLE	WY	0.42E	0.42
BCPS2	PEEVER 4S	SD	0.42	0.42
STAN1	STAPLETON 5W	NE	0.42	0.42
TAYN1	TAYLOR	NE	0.42	0.42
TYLN1	TAYLOR	NE	0.42E	0.42
VDIM7	VANDIKE FARMS 4NNE	MO	0.42	0.42
WAKK1	WAKEENEY 16N	KS	0.42E	0.42
AUBN1	AUBURN 5ESE	NE	0.41	0.41
AUAM7	AURORA	MO	0.41E	0.41
ROCK002	BASSETT 14SE	NE	0.41E	0.41
BLGN1	BELGRADE	NE	0.41	0.41
BEYM7	BETHANY, E FK BIG CR	MO	0.41	0.41
BLKI4	BLOCKTON 1W	IA	0.41	0.41
COSU40	BRECKENRIDGE 3SE	CO	0.41E	0.41
CPMK1	CHAPMAN	KS	0.41	0.41
CYDK1	CLYDE	KS	0.41E	0.41
DIXM7	DIXON 9SE	MO	0.41E	0.41
FAPM7	FAIR PLAY 1SW	MO	0.41E	0.41
FRYK1	FT RILEY	KS	0.41E	0.41
HRMN1	HERMAN	NE	0.41E	0.41
HMNN1	HERMAN 4WSW	NE	0.41E	0.41
HIAK1	HIAWATHA 9ESE	KS	0.41	0.41
HMBK1	HUMBOLDT	KS	0.41E	0.41
LLNN1	LINCOLN FIRE STA 5	NE	0.41E	0.41
LNEN1	LINCOLN FIRE STA 7	NE	0.41E	0.41
LVNN1	LINCOLN, STEVENS CR	NE	0.41	0.41
MNTK1	MANHATTAN 4N	KS	0.41	0.41
CBAS2	MUD LAKE OUTLET	SD	0.41E	0.41

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NWPN1	NEWPORT	NE	0.41E	0.41
NORM7	NORWOOD 7NNE	MO	0.41E	0.41
ORGM7	OREGON	MO	0.41E	0.41
PNNS2	PINNACLES RANGER STA	SD	0.41E	0.41
POKM7	POLK, POMME DE TERRE	MO	0.41E	0.41
SSKW4	RIVERSIDE, SPRING CR	WY	0.41E	0.41
TGSN8	TAGUS	ND	0.41E	0.41
BDLS2	WAUBAY 3NE	SD	0.41E	0.41
BUCC2	ALMA 4SE	CO	0.40	0.41
AXTK1	AXTELL	KS	0.40E	0.41
BRNN1	BERTRAND	NE	0.40E	0.41
BVRM7	BOLIVAR 1NE	MO	0.40E	0.41
BRGC2	BRECKENRIDGE	CO	0.40E	0.41
CNU	CHANUTE	KS	0.40E	0.41
DNBN1	DANNEBROG #2	NE	0.40E	0.41
DABN1	DANNEBROG 4NW	NE	0.40E	0.41
DBGN1	DANNEBROG, TURKEY CR	NE	0.40	0.41
DOMC2	DEAD MAN HILL	CO	0.40E	0.41
GAGE022	DILLER 3E	NE	0.40E	0.41
ESKK1	ESKRIDGE	KS	0.40	0.41
0592N8	HANNOVER 3E	ND	0.40E	0.41
HTTM7	HORTON 2S	MO	0.40	0.41
IRRS2	INTERIOR, WHITE R	SD	0.40	0.41
KLLN8	KILLDEER	ND	0.40	0.41
BUSS2	LEAD 11SSW	SD	0.40E	0.41
Y22	LEMMON	SD	0.40E	0.41
LNDC2	LINDON 5WNW	CO	0.40	0.41
LRVC2	LONG DRAW RES SNOTEL	CO	0.40E	0.41
MHTK1	MANHATTAN	KS	0.40	0.41
MRQW4	MARQUETTE CREEK	WY	0.40	0.41
MOVN7	MT VERNON	MO	0.40E	0.41
OELS2	OELRICHS	SD	0.40E	0.41
HHDS2	OELRICHS, HORSEHEAD C	SD	0.40	0.41
OGLN1	OGALLALA	NE	0.40E	0.41
OSKK1	OSKALOOSA 4NE	KS	0.40E	0.41
OTTK1	OTTAWA	KS	0.40	0.41
OTWK1	OTTAWA	KS	0.40E	0.41
PLVN1	PLAINVIEW	NE	0.40E	0.41
PMPM8	POMPEYS PILLAR 18N	MT	0.40E	0.41
RACS2	RAPID CITY 4NW	SD	0.40	0.41
RWCN1	RED WILLOW (BLO DAM)	NE	0.40E	0.41
RHIS2	REE HEIGHTS 6SW	SD	0.40E	0.41
NRPS2	ROCHFORD 7NW	SD	0.40	0.41
SCOK1	SCOTT CITY	KS	0.40E	0.41
MTTK1	TUTTLE CREEK DAM	KS	0.40E	0.41
WALI4	WALLIN 1NW	IA	0.40E	0.41
COWA50	WOODROW 17SSE	CO	0.40E	0.41
ARNN1	ARNOLD	NE	0.39E	0.39
ABRN1	AUBURN, LTL NEMAHA R	NE	0.39E	0.39
AVOI4	AVOCA	IA	0.39E	0.39
DOHS2	BAKER PARK RAWS	SD	0.39E	0.39
BRLM7	BURLINGTON JCT 1W	MO	0.39E	0.39
BRJM7	BURLINGTON JUNCTION	MO	0.39E	0.39

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CARK1	CARBONDALE	KS	0.39E	0.39
CENK1	CENTRALIA	KS	0.39E	0.39
CLKC2	CLARK	CO	0.39E	0.39
DROS2	DEADWOOD 15SSE	SD	0.39E	0.39
DIAK1	DIAMOND SPRINGS	KS	0.39E	0.39
FARS2	FARMINGDALE, RAPID C	SD	0.39E	0.39
GRSN1	GRESHAM 3W	NE	0.39E	0.39
KELS2	KELDRON 8SSW	SD	0.39E	0.39
MHKK1	MANHATTAN, KANSAS R	KS	0.39E	0.39
MSCK1	MUSCOTAH, DELAWARE R	KS	0.39	0.39
NRBI4	NORTHBORO	IA	0.39E	0.39
BIGS2	RAPID CITY, RAPID CR	SD	0.39	0.39
RHGS2	REE HEIGHTS 8S	SD	0.39E	0.39
RSDM7	ROSENDALE, 102 RIVER	MO	0.39	0.39
SAVM7	SAVANNAH 1S	MO	0.39E	0.39
SIPK1	SCIPPIO, POTTAWATOMIE	KS	0.39	0.39
SELS2	SELBY	SD	0.39E	0.39
WLN14	STANTON 4N	IA	0.39E	0.39
VALN1	VALENTINE NWR	NE	0.39E	0.39
VNAM7	VIENNA 2WNW	MO	0.39E	0.39
WNSN1	WINSIDE	NE	0.39E	0.39
AKAS2	AKASKA 21SE	SD	0.38E	0.38
ARNK1	ARNOLD, SMOKY HILL R	KS	0.38E	0.38
BOHN1	BOYSTOWN #2	NE	0.38E	0.38
CRGN8	CARRINGTON 4N	ND	0.38	0.38
CO0	CHEYENNE WELLS	CO	0.38E	0.38
CHYC2	CHEYENNE WELLS	CO	0.38E	0.38
COI14	COIN	IA	0.38E	0.38
EMDK1	ELMDALE 3NE	KS	0.38E	0.38
EWGN1	EWING	NE	0.38E	0.38
GROM7	GROVESPRING 4W	MO	0.38E	0.38
LAA	LAMAR	CO	0.38E	0.38
LANK1	LANE	KS	0.38	0.38
LNEK1	LANE, POTTAWATOMIE C	KS	0.38E	0.38
LCTK1	LECOMPTON	KS	0.38E	0.38
LCPK1	LECOMPTON, KANSAS R	KS	0.38E	0.38
MCK	MCCOOK	NE	0.38	0.38
BNNS2	NEMO, BOXELDER CR	SD	0.38E	0.38
PRRK1	PERRY LAKE	KS	0.38	0.38
PTRK1	POTTER, STRANGER CR	KS	0.38	0.38
SHLM7	SHELL CITY	MO	0.38E	0.38
SPES2	SPEARFISH	SD	0.38E	0.38
SBFS2	STURGIS 20NE	SD	0.38E	0.38
UTIS2	UTICA	SD	0.38E	0.38
VLYK1	VALLEY FALLS 3SW	KS	0.38E	0.38
WSGS2	WESSINGTON 8NE	SD	0.38E	0.38
AGNK1	AGENDA	KS	0.37	0.38
ALNN1	ALLEN	NE	0.37E	0.38
MSQC2	ALMA 1S	CO	0.37E	0.38
AURK1	AURORA	KS	0.37E	0.38
BERK1	BERRYTON	KS	0.37E	0.38

BRON1	BROWNVILLE	NE	0.37E	0.38
CAMM7	CAMERON	MO	0.37	0.38

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CID	CEDAR RAPIDS AIRPORT	IA	0.37	0.38
APA	DENVER CENTENNIAL AP	CO	0.37	0.38
ELLN8	ELLEDALE 1N	ND	0.37E	0.38
FRI	FT RILEY	KS	0.37E	0.38
HRDM5	HARDWICK	MN	0.37E	0.38
HBGK1	HOLLENBERG, LTL BLUE	KS	0.37E	0.38
LNHN1	LINCOLN FIRE STA 10	NE	0.37E	0.38
LGFK1	LONGFORD	KS	0.37E	0.38
MYLM7	MARYVILLE 1E	MO	0.37E	0.38
MYVM7	MARYVILLE, 102 RIVER	MO	0.37	0.38
MVLS2	MILESVILLE 5NE	SD	0.37E	0.38
MLRM7	MILLER 1E	MO	0.37	0.38
RAPS2	PACTOLA DAM	SD	0.37	0.38
MLDN1	PAPIO CREEK DAM	NE	0.37E	0.38
ROKI4	RED OAK	IA	0.37	0.38
RDOI4	RED OAK, NISHNABOTNA	IA	0.37E	0.38
RXFK1	REXFORD	KS	0.37	0.38
SCES2	SCENIC 9NE	SD	0.37E	0.38
SHAC2	SHAW 4ENE	CO	0.37	0.38
ULYN1	ULYSSES	NE	0.37E	0.38
OA EK1	WAKEENEY	KS	0.37E	0.38
WLFN1	WELLFLEET	NE	0.37	0.38
ICT	WICHITA	KS	0.37	0.38
ATSK1	ATCHISON 1S	KS	0.36	0.37
UVIC2	AURORA 5N	CO	0.36E	0.37
BRTN8	BERTHOLD	ND	0.36E	0.37
BOLM7	BOLIVAR 3NW	MO	0.36E	0.37
WYNT3	CASPER 4WSW	WY	0.36E	0.37
CLDI4	CLARINDA	IA	0.36E	0.37
ICLI4	CLARINDA, NODAWAY R	IA	0.36	0.37
ENPW4	ENCAMPMENT	WY	0.36E	0.37
FKNN1	FRANKLIN, CENTER CR	NE	0.36E	0.37
GENC2	GENOA 1W	CO	0.36E	0.37
HRVK1	HARVEYVILLE	KS	0.36E	0.37
PNWS2	HILLAND 2NW	SD	0.36E	0.37
HORM7	HORTON 3NE	MO	0.36E	0.37
KSTS2	KEYSTONE, SPRING CR	SD	0.36E	0.37
LMRM7	LAMAR	MO	0.36E	0.37
LARM7	LAMAR 12NE	MO	0.36E	0.37
LEBK1	LEBO	KS	0.36E	0.37
LLLK1	LILLIS	KS	0.36	0.37
LWRM7	LOWRY CITY 5E	MO	0.36E	0.37
NAPN1	NAPONEE, TURKEY CR	NE	0.36	0.37
NGRN1	NEWMAN GROVE	NE	0.36E	0.37
OCNN1	OCONTO	NE	0.36E	0.37
OCDN1	ORCHARD 9NNE	NE	0.36E	0.37
OPSK1	OVERLAND PARK	KS	0.36	0.37
PSBN1	PAPILLION 6NW	NE	0.36E	0.37
PAWN1	PAWNEE CITY	NE	0.36E	0.37

PUB	PUEBLO	CO	0.36	0.37
STMM7	ST JAMES	MO	0.36E	0.37
SOAM7	ST JOE RIPLEY (1)	MO	0.36E	0.37
WDBK1	WOODBINE, LYONS CR	KS	0.36E	0.37

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WDLK1	WOODLAWN 2W	KS	0.36E	0.37
YORN1	YORK 3N	NE	0.36	0.37
ADRM5	ADRIAN	MN	0.35E	0.35
ATCK1	ATCHISON, MISSOURI R	KS	0.35E	0.35
BNAM7	BEAN LAKE	MO	0.35E	0.35
BEVN1	BEAVER CITY 4WSW	NE	0.35E	0.35
CUST022	BERWYN 4NNE	NE	0.35E	0.35
BLBN1	BLAIR 4SW	NE	0.35E	0.35
BRGK1	BURLINGAME, DRAGOON C	KS	0.35E	0.35
CTLN1	CENTRAL CITY	NE	0.35E	0.35
CHLK1	CHALK	KS	0.35E	0.35
CNUK1	CHANUTE 3N GDDS	KS	0.35	0.35
CSXM7	CLIMAX SPRINGS	MO	0.35E	0.35
CLNM7	CLINTON	MO	0.35	0.35
ENTK1	ENTERPRISE	KS	0.35E	0.35
ETPK1	ENTERPRISE	KS	0.35	0.35
GOEN1	GOEHNER	NE	0.35E	0.35
HWKM5	HARDWICK 2NW	MN	0.35E	0.35
NESN1	HASKELL AGRICULTURAL	NE	0.35E	0.35
HRFS2	HEREFORD 12SW	SD	0.35E	0.35
HOLK1	HOLTON, SOLDIER CR	KS	0.35E	0.35
HOUS2	HOUGHTON 4SE	SD	0.35E	0.35
JOEC2	JOES	CO	0.35	0.35
ADAM010	JUNIATA 7WSW	NE	0.35E	0.35
KMLC2	KREMMLING 1E	CO	0.35E	0.35
MILM7	MILLER	MO	0.35E	0.35
OSGK1	OSAGE CITY	KS	0.35	0.35
OSAK1	OSAWATOMIE	KS	0.35	0.35
OSMK1	OSAWATOMIE 1NW	KS	0.35E	0.35
PACS2	PACTOLA RESERVOIR	SD	0.35E	0.35
ADAM006	ROSELAND 3SW	NE	0.35E	0.35
SJAM7	ST JAMES 4NE	MO	0.35E	0.35
TAKM7	TARKIO #2	MO	0.35	0.35
TRYK1	TROY 3N	KS	0.35E	0.35
UNTK1	UNIONTOWN	KS	0.35E	0.35
VALM7	VALLEY CITY	MO	0.35	0.35
VLYM7	VALLEY CITY 1NW	MO	0.35E	0.35
WSPS2	WESSINGTON SPRINGS	SD	0.35E	0.35
ABLK1	ABILENE	KS	0.34E	0.34
ALVK1	ALTA VISTA	KS	0.34E	0.34
AVCM5	AVOCA	MN	0.34E	0.34
BERN8	BERTHOLD 4NW	ND	0.34E	0.34
BSHK1	BUSHONG 5W	KS	0.34E	0.34
CHPK1	CHAPMAN, CHAPMAN CR	KS	0.34E	0.34
CSGM7	CLIMAX SPRINGS 3S	MO	0.34E	0.34
COZN1	COZAD 2S, PLATTE R	NE	0.34E	0.34
EVEM7	EVERTON 3S	MO	0.34E	0.34

FFXM7	FAIRFAX 1W, TARKIO R	MO	0.34E	0.34
CUST004	GOTHENBURG 15NNW	NE	0.34E	0.34
GNTM7	GRANT CITY	MO	0.34E	0.34
GVSM7	GROVESPRING 3N	MO	0.34E	0.34
HLLM7	HALLTOWN	MO	0.34E	0.34
HSII4	HASTINGS 4NE	IA	0.34E	0.34

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HEAK1	HEALY	KS	0.34E	0.34
HTNM7	HORTON, LTL OSAGE R	MO	0.34E	0.34
MCI	KANSAS CITY INTL AP	MO	0.34	0.34
KNNM5	KENNETH 3NE	MN	0.34E	0.34
KIRC2	KIRK AMRAD	CO	0.34E	0.34
LEMS2	LEMMON	SD	0.34E	0.34
LION1	LINCOLN FIRE STA 2	NE	0.34E	0.34
NEWN1	NEWCASTLE	NE	0.34E	0.34
ODSN1	ODESSA	NE	0.34E	0.34
PLNM7	PLEASANT HOPE 2N	MO	0.34	0.34
ECHS2	RAPID CITY 5W	SD	0.34	0.34
SCZM7	SHELL CITY, OSAGE R	MO	0.34E	0.34
TARM7	TARKIO 1SW	MO	0.34E	0.34
TION8	TIOGA 1E	ND	0.34E	0.34
WTRN1	WATERLOO, ELKHORN R	NE	0.34E	0.34
WVRN1	WAVERLY	NE	0.34E	0.34
SZL	WHITEMAN AFB	MO	0.34	0.34
ALAM7	ALBANY	MO	0.33E	0.34
ALBM7	ALBANY	MO	0.33E	0.34
ALBN1	ALBION	NE	0.33E	0.34
COAR186	AURORA 3WSW	CO	0.33	0.34
DSPK1	BURDICK	KS	0.33E	0.34
CYNS2	CANYON LAKE ABOVE	SD	0.33E	0.34
CLMM7	COLOMA	MO	0.33	0.34
CRII4	CORRECTIONVILLE 1SW	IA	0.33E	0.34
KCRW4	ELK MNT 12ESE ROCK C	CO	0.33	0.34
LLKS2	EUREKA 13NE RAWS	SD	0.33E	0.34
GARK1	GARNETT 1E	KS	0.33	0.34
GTNS2	GROTON	SD	0.33E	0.34
LASS2	HARROLD 28S	SD	0.33E	0.34
HZLM7	HAZELGREEN 1W	MO	0.33	0.34
ISBS2	ISABEL 14NNE	SD	0.33E	0.34
LRCK1	LAWRENCE	KS	0.33E	0.34
LWC	LAWRENCE	KS	0.33	0.34
LNFN1	LINCOLN FIRE STA 8	NE	0.33E	0.34
MCJN1	MCCOOL JUNCTION	NE	0.33E	0.34
NZLN1	NENZEL 23SSW	NE	0.33E	0.34
NIAM7	NIANGUA	MO	0.33	0.34
PLTS2	PLATTE	SD	0.33E	0.34
RCHK1	RICHLAND, WAKARUSA R	KS	0.33E	0.34
SAJM7	ST JOSEPH	MO	0.33E	0.34
TRDK1	STATELINE RAWS	KS	0.33	0.34
TOP	TOPEKA	KS	0.33	0.34
KSSN7	TOPEKA 5ESE	KS	0.33E	0.34
TRGK1	TREGO CENTER	KS	0.33E	0.34

ABAM7	ALBANY, E FK GRAND R	MO	0.32E	0.32
ATHK1	ATCHISON	KS	0.32	0.32
BNNC2	BENNETT 2SE	CO	0.32E	0.32
WEBS009	BLADEN 4SW	NE	0.32E	0.32
BRDN1	BRADSHAW	NE	0.32	0.32
BRLC2	BURLINGTON	CO	0.32E	0.32
CACS2	CAMP CROOK	SD	0.32	0.32
CAMS2	CAMP CROOK 1NW RAW	SD	0.32E	0.32

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CDNN1	CHADRON	NE	0.32E	0.32
CCPM7	CONCEPTION	MO	0.32	0.32
CNGK1	COUNCIL GROVE DAM	KS	0.32	0.32
DNCN8	DUNN CENTER 1E	ND	0.32E	0.32
COPK15	FAIRPLAY 3WNW	CO	0.32E	0.32
GWDI4	GRISWOLD	IA	0.32E	0.32
HIHS2	HIGHMORE 7S	SD	0.32E	0.32
IRES2	IRENE	SD	0.32E	0.32
KRNN1	KEARNEY 4NE	NE	0.32E	0.32
LCGK1	LA CYGNE 1W	KS	0.32E	0.32
LAYK1	LA CYGNE 4ESE	KS	0.32E	0.32
3K7	LEOTI	KS	0.32E	0.32
LIES2	LITTLE EAGLE, GRAND R	SD	0.32E	0.32
MNFM7	MANSFIELD	MO	0.32	0.32
MNOS2	MENNO	SD	0.32E	0.32
MLLK1	MILLER 4SSW	KS	0.32	0.32
MRNM7	MT VERNON 3NE	MO	0.32E	0.32
ODLN1	ODELL	NE	0.32E	0.32
OTOE004	PALMYRA 2S	NE	0.32E	0.32
PALK1	PAOLA 10W	KS	0.32E	0.32
PLGN1	PILGER, ELKHORN R	NE	0.32E	0.32
PTEM7	PLATTE CITY (DNR)	MO	0.32	0.32
RDGK1	READING 2N	KS	0.32E	0.32
RGNN8	REGAN 6NE	ND	0.32E	0.32
ROSN1	ROSE 10WNW	NE	0.32E	0.32
WHEE006	SPALDING 6N	NE	0.32E	0.32
TPOK1	TRADING POST 2SSE	KS	0.32E	0.32
VILI4	VILLISCA	IA	0.32E	0.32
BERS2	WANBLEE 9WSW	SD	0.32E	0.32
WNRS2	WAUBAY WILDLIFE REF	SD	0.32E	0.32
WLDN8	WILDROSE 3NW	ND	0.32E	0.32
AUBK1	AUBURN	KS	0.31E	0.31
BSTN1	BASSETT	NE	0.31E	0.31
BEDI4	BEDFORD	IA	0.31	0.31
BLNK1	BLAINE	KS	0.31E	0.31
CRLK1	CIRCLEVILLE 7SW	KS	0.31E	0.31
CUBK1	CUBA	KS	0.31E	0.31
DDGN1	DODGE	NE	0.31E	0.31
HRSK1	HARRIS 3SSW	KS	0.31E	0.31
KDKS2	KADOKA 6S, WHITE R	SD	0.31	0.31
KLDS2	KELDRON 22SSW	SD	0.31E	0.31
KILN8	KILLDEER 8NW	ND	0.31E	0.31
LICN1	LINCOLN, LTL SALT CR	NE	0.31	0.31

MOFSA109	MOUNT VERNON 1NNW	MO	0.31E	0.31
NRDN8	NEW ROCKFORD, JAMES R	ND	0.31E	0.31
OPEK1	O P #1300 (CORP WDS)	KS	0.31E	0.31
RBUM7	PLATO, ROUBIDOUX CR	MO	0.31E	0.31
POLS2	POLLOCK	SD	0.31E	0.31
RVRN1	RIVERTON, REPUBLICAN	NE	0.31E	0.31
RVTN1	RIVERTON, THOMPSON C	NE	0.31	0.31
ZOMK1	SHIELDS 1NE	KS	0.31E	0.31
STBM7	STANBERRY	MO	0.31E	0.31
SPHN1	STAPLEHURST 3WNW	NE	0.31E	0.31

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WDM7	WINDSOR	MO	0.31E	0.31
WNSM7	WINDSOR #2	MO	0.31	0.31
COEL2	AGATE 9SE	CO	0.30E	0.31
BNRS2	BOXELDER CREEK	SD	0.30	0.31
CMRM7	CAMERON 4NW	MO	0.30E	0.31
CRNN8	CARRINGTON 4N	ND	0.30E	0.31
CRLM7	CARROLLTON	MO	0.30	0.31
CCRN1	CLAY CENTER	NE	0.30	0.31
CCRM7	CONCORDIA	MO	0.30E	0.31
EMMK1	EMMETT	KS	0.30E	0.31
FGVM7	FAIR GROVE 3NE	MO	0.30E	0.31
CUST020	GOTHENBURG 24N	NE	0.30E	0.31
MOWH1	GRANT CITY 4WSW	MO	0.30E	0.31
GRTM7	GRANT CITY 5WSW	MO	0.30	0.31
HADK1	HADDAM	KS	0.30E	0.31
HYAN1	HYANNIS	NE	0.30E	0.31
IDPC2	INDEPENDENCE PASS	CO	0.30	0.31
ITRC2	INTER CANYON	CO	0.30	0.31
JWGC2	JACKWHACKER GULCH	CO	0.30	0.31
JUDS2	KEYSTONE, BATTLE CR	SD	0.30	0.31
NOLC2	LAKEWOOD	CO	0.30E	0.31
LPRW4	LAPRELE CREEK	WY	0.30E	0.31
MDDW4	MIDDLE POWDER	WY	0.30	0.31
MNDS2	MOUND CITY	SD	0.30E	0.31
NSSC2	NAST LAKE	CO	0.30	0.31
PLSK1	PLEASANTON	KS	0.30E	0.31
PLKN1	POLK	NE	0.30E	0.31
ZRGK1	RANSOM	KS	0.30E	0.31
RANK1	RANSOM 2NE	KS	0.30	0.31
RCDM7	RICHARDS	MO	0.30E	0.31
ROCS2	ROCHFORD 2WNW	SD	0.30E	0.31
WYCR5	ROCK RIVER 10WSW	WY	0.30E	0.31
SGBW4	SAGE CREEK BASIN	WY	0.30	0.31
SDLM7	SEDALIA WATER PLANT	MO	0.30	0.31
SODM7	ST JOE WHITHD (4)	MO	0.30E	0.31
RAWC2	WALDEN 15ENE	CO	0.30	0.31
WRMM8	WARM SPRINGS	MT	0.30	0.31
WSBN8	WASHBURN, MISSOURI R	ND	0.30E	0.31
WPKW4	WHISKEY PARK	WY	0.30	0.31
WNDW4	WINDY PEAK	WY	0.30	0.31
BOCM7	BOLCKOW, 102 RIVER	MO	0.29	0.29

CAHM7	CALHOUN	MO	0.29E	0.29
CAXM7	CARROLLTON, WAKENDA C	MO	0.29	0.29
CHYS2	CHERRY CREEK GDDS	SD	0.29E	0.29
ZODK1	DIGHTON	KS	0.29E	0.29
EDGK1	EDGERTON 2NE	KS	0.29	0.29
FLGC2	FLAGLER 1S	CO	0.29E	0.29
MAPS2	FREDERICK, MAPLE R	SD	0.29E	0.29
LVMC2	GEORGETOWN 1S	CO	0.29	0.29
CLEC2	GEORGETOWN 2S	CO	0.29E	0.29
HIMS2	HIGHMORE 23N	SD	0.29E	0.29
IOW	IOWA CITY AIRPORT	IA	0.29	0.29
LEXX1	LENEXA	KS	0.29E	0.29

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LXAK1	LENEXA	KS	0.29E	0.29
KSJ010	LENEXA 2NE	KS	0.29E	0.29
LNK	LINCOLN	NE	0.29	0.29
LDGS2	LODGEPOLE 10NW	SD	0.29E	0.29
MSDK1	LOONEY, MIKE	KS	0.29E	0.29
MOUM7	MOUNDVILLE	MO	0.29E	0.29
MTGM7	MOUNTAIN GROVE 2N	MO	0.29E	0.29
NRKN8	NEW ROCKFORD	ND	0.29E	0.29
CBYN1	OMAHA	NE	0.29E	0.29
PLNS2	PLAINVIEW, CHEYENNE R	SD	0.29E	0.29
PRGN1	PRAGUE	NE	0.29E	0.29
UPCS2	RAPID CITY 13W	SD	0.29E	0.29
RCWS2	RAPID CITY 4SW	SD	0.29E	0.29
RHHM7	RICH HILL (DNR)	MO	0.29E	0.29
SEYM7	SEYMOUR 1N	MO	0.29E	0.29
SJPM7	ST JOSEPH 4SE	MO	0.29E	0.29
FOE	TOPEKA FORBES FIELD	KS	0.29	0.29
UUUK1	UNIONTOWN, MARMATON R	KS	0.29E	0.29
APCM7	APPLETON CITY	MO	0.28	0.28
CWYN1	CALLAWAY 8WSW	NE	0.28	0.28
CPMN1	CHAPMAN	NE	0.28E	0.28
CFV	COFFEYVILLE AIRPORT	KS	0.28	0.28
CRSN1	CRESTON	NE	0.28E	0.28
CRTI4	CRESTON 2SW	IA	0.28E	0.28
DOWM7	DOWNING	MO	0.28	0.28
DNCN1	DUNCAN 2S, PLATTE R	NE	0.28E	0.28
OTOE008	EAGLE 4S	NE	0.28E	0.28
FRXM7	FAIRFAX	MO	0.28E	0.28
FRPC2	FAIRPLAY 1SE	CO	0.28E	0.28
GELN1	GENOA 2S, LOUP R	NE	0.28E	0.28
COCC13	GEORGETOWN 1SSW	CO	0.28E	0.28
GDEK1	GLADE, N FK SOLOMON	KS	0.28	0.28
KMLS2	GROTON 7NW	SD	0.28E	0.28
HERK1	HERINGTON	KS	0.28	0.28
HBLN1	HUMBOLDT	NE	0.28E	0.28
ADAM002	JUNIATA 6SSW	NE	0.28E	0.28
LNXI4	LENOX	IA	0.28E	0.28
LIEM7	LIBERAL 3SW	MO	0.28E	0.28
LTLC2	MARSTON FILTER PLANT	CO	0.28	0.28

MTHC2	MATHESON 8SE	CO	0.28E	0.28
PROW4	MCFADDEN 2NNE	WY	0.28E	0.28
MELS2	MELLETTE 4W	SD	0.28E	0.28
MVRM7	MT VERNON	MO	0.28E	0.28
RHTS2	REE HEIGHTS	SD	0.28E	0.28
REHS2	REE HEIGHTS	SD	0.28E	0.28
SSTM7	SHARPS STATION	MO	0.28E	0.28
SSZM7	SHARPS STATION GDDS	MO	0.28E	0.28
SJSM7	ST JOSEPH, MISSOURI	MO	0.28E	0.28
SURN1	SURPRISE	NE	0.28E	0.28
VNOC2	VERNON 4E	CO	0.28E	0.28
WKEK1	WAKEFIELD 4W	KS	0.28E	0.28
WRRM7	WARRENSBURG 4NW	MO	0.28	0.28
WAVK1	WAVERLY	KS	0.28E	0.28

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WORM7	WORTH 4W	MO	0.28E	0.28
ALXN1	ALEXANDRIA 3S	NE	0.27E	0.28
CREN1	CREIGHTON	NE	0.27E	0.28
CRTN1	CRETE 1W, BIG BLUE R	NE	0.27E	0.28
COAR43	DENVER 9S	CO	0.27	0.28
DLPK1	DUNLAP 2N	KS	0.27E	0.28
GCEN8	GRACE CITY, JAMES R	ND	0.27	0.28
GRMM7	GRAHAM	MO	0.27E	0.28
GRZM7	GRAHAM, NODAWAY R	MO	0.27E	0.28
HVNN8	HAVANA	ND	0.27	0.28
HEDS2	HERRIED	SD	0.27E	0.28
NTCM7	KANSAS CITY 1SE	MO	0.27E	0.28
WTCM7	KANSAS CITY NWSTC	MO	0.27E	0.28
COWE265	KEENESBURG 5E	CO	0.27E	0.28
KGCM7	KING CITY	MO	0.27E	0.28
LKWC2	LAKEWOOD 4NW	CO	0.27	0.28
LEVK1	LEAVENWORTH	KS	0.27E	0.28
LVNK1	LEAVENWORTH	KS	0.27	0.28
LOKN1	LINCOLN 5NW, OAK CR	NE	0.27	0.28
MNGN8	MANNING, KNIFE R	ND	0.27	0.28
MCFK1	MCFARLAND	KS	0.27	0.28
GASN8	MINOT 4W	ND	0.27E	0.28
MHLS2	MITCHELL	SD	0.27E	0.28
ONGK1	ONAGA 12 SSW	KS	0.27E	0.28
OTOI4	OTO	IA	0.27E	0.28
OPNK1	OVERLAND PARK	KS	0.27E	0.28
PKD	PARK RAPIDS AIRPORT	MN	0.27E	0.28
PXCK1	PAXICO 1SW, MILL CR	KS	0.27E	0.28
PHIK1	PHILLIPSBURG #2	KS	0.27E	0.28
PHLK1	PHILLIPSBURG 1SSE	KS	0.27E	0.28
SBTN1	SHUBERT 2SW	NE	0.27E	0.28
SSDC2	STRONTIA SPRINGS DAM	CO	0.27	0.28
WKYK1	WAKEENEY	KS	0.27E	0.28
AGYM7	AGENCY 4NE, PLATTE R	MO	0.26	0.26
AXDN1	ALEXANDRIA,BIG SANDY	NE	0.26	0.26
BDAN1	BARADA 3SW	NE	0.26E	0.26
BILM7	BILLINGS 4N	MO	0.26E	0.26

BOXN1	BOX BUTTE DAM	NE	0.26E	0.26
UBLC2	BRECKENRIDGE 7SSW	CO	0.26E	0.26
BTLM7	BUTLER 4SW, MIAMI CR	MO	0.26E	0.26
BYRC2	BYERS 5ENE	CO	0.26E	0.26
CMRW4	CASPER MOUNTAIN	WY	0.26E	0.26
CNVK1	CENTERVILLE 4SW	KS	0.26	0.26
POLC2	DECKERS 5E	CO	0.26	0.26
DUNK1	DUNLAP 2N	KS	0.26E	0.26
EMP	EMPORIA	KS	0.26E	0.26
EWIN1	EWING 1N, ELKHORN R	NE	0.26E	0.26
FTBS2	FORESTBURG 3NE	SD	0.26E	0.26
FRMN8	FORMAN 5SSE	ND	0.26E	0.26
GOLC2	GOLDEN 3S	CO	0.26E	0.26
0063N8	GRASSY BUTTE 9SE	ND	0.26E	0.26
HLDS2	HARROLD 12SSW	SD	0.26E	0.26
HIGM7	HIGGINSVILLE	MO	0.26	0.26

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HORI4	HORNICK 5S	IA	0.26E	0.26
HOWN1	HOWELLS	NE	0.26	0.26
KWNK1	KIRWIN 1S	KS	0.26E	0.26
KRWK1	KIRWIN DAM	KS	0.26	0.26
LBNB1	LINCOLN FIRE STA 3	NE	0.26E	0.26
LNCK1	LINCOLNVILLE	KS	0.26E	0.26
LOUK1	LOUISVILLE 5NE	KS	0.26E	0.26
LOUN1	LOUISVILLE, PLATTE R	NE	0.26E	0.26
MMON1	MALMO 3E	NE	0.26E	0.26
MNHK1	MANHATTAN 6S	KS	0.26E	0.26
MCGN8	MCGREGOR	ND	0.26E	0.26
OLEK1	OLATHE 2W	KS	0.26	0.26
PLYK1	PLYMOUTH 1SW	KS	0.26E	0.26
SABK1	SABETHA	KS	0.26E	0.26
STJ	ST JOSEPH 4WNW	MO	0.26	0.26
SLBN1	ST LIBORY	NE	0.26E	0.26
STSC2	STRONTIA SPRINGS RES	CO	0.26E	0.26
ASWN1	AINSWORTH	NE	0.25E	0.25
BVRN1	BEAVER CROSSING	NE	0.25E	0.25
BLVK1	BELLEVILLE	KS	0.25	0.25
BLUN1	BLUE HILL 4SW	NE	0.25	0.25
BLMK1	BLUE MOUND	KS	0.25E	0.25
BTNC2	BRIGHTON	CO	0.25E	0.25
CSWW4	CASPER 1SW	WY	0.25E	0.25
CCRK1	CLAY CENTER	KS	0.25	0.25
CLAK1	CLAY CENTER #1	KS	0.25E	0.25
CYCK1	CLAY CENTER, REPUB R	KS	0.25E	0.25
CITM7	CLINTON RAWES	MO	0.25	0.25
COOC2	COMO 4SE	CO	0.25E	0.25
CTEN1	CRETE	NE	0.25E	0.25
DTXC2	DEER TRAIL, MUDDY CR	CO	0.25	0.25
DRHN8	DICKINSON RANCH HQ	ND	0.25E	0.25
HATS2	EDGEMONT, HAT CR	SD	0.25	0.25
FWRM7	EDWARDS 10N	MO	0.25E	0.25
FRSC2	FRISCO	CO	0.25E	0.25

KSJ013	GARDNER 3SE	KS	0.25E	0.25
GNAN1	GENOA 2W	NE	0.25E	0.25
GTNC2	GEORGETOWN, CLEAR CR	CO	0.25E	0.25
GEVC2	GOLDEN 4SW	CO	0.25E	0.25
GONC2	GOLDEN 6NW	CO	0.25E	0.25
GOTN1	GOTHENBURG	NE	0.25E	0.25
GIDN1	GRAND ISLAND, WOOD R	NE	0.25E	0.25
KCPM7	KANSAS CITY 1SE	MO	0.25E	0.25
KWPM7	KC WARD PARKWAY	MO	0.25	0.25
KEAN1	KEARNEY 3S, PLATTE R	NE	0.25E	0.25
LAJM7	LAMAR 7S	MO	0.25E	0.25
LNAN1	LINCOLN FIRE STA 1	NE	0.25E	0.25
NEBN1	NEBRASKA CITY	NE	0.25E	0.25
NCYN1	NEBRASKA CITY 2NW	NE	0.25E	0.25
DWCM7	NEVADA, DRY WOOD CR	MO	0.25E	0.25
OPCK1	O P #1100 (CTY HALL)	KS	0.25E	0.25
KSJ012	OLATHE 3W	KS	0.25E	0.25
OMLN1	OMAHA 5W	NE	0.25E	0.25

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PTTM7	PATTONSBURG 2S	MO	0.25	0.25
PATM7	PATTONSBURG, GRAND R	MO	0.25E	0.25
RALM7	ROLLA	MO	0.25E	0.25
RRGM7	ROLLA (UNIV OF MO)	MO	0.25	0.25
RSEM7	ROSEBUD	MO	0.25	0.25
RVEK1	ROSSVILLE	KS	0.25	0.25
RSSK1	ROSSVILLE, CROSS CR	KS	0.25E	0.25
RYLN1	ROYAL	NE	0.25E	0.25
SOFM7	ST JOE LNDFIL (6)	MO	0.25E	0.25
STON1	STANTON 7NE	NE	0.25	0.25
SETM7	STET 1S	MO	0.25E	0.25
TWKN8	TEWAUKON RAWS	ND	0.25E	0.25
GURMB	TONGANOXIE 3NE	KS	0.25E	0.25
WASN8	WASHBURN	ND	0.25E	0.25
WAVM7	WAVERLY	MO	0.25E	0.25
WVYM7	WAVERLY	MO	0.25E	0.25
WVZM7	WAVERLY GDDS	MO	0.25E	0.25
YNNS2	YANKTON, JAMES R	SD	0.25E	0.25
AMCK1	AMERICUS 2S	KS	0.24E	0.24
SMMC2	ARVADA	CO	0.24E	0.24
BCDC2	BEAR CREEK DAM	CO	0.24E	0.24
ZROK1	BEELEER	KS	0.24E	0.24
ZRNK1	BEELEER	KS	0.24	0.24
CARN8	CARRINGTON	ND	0.24E	0.24
CHDN1	CHADRON 3SW	NE	0.24E	0.24
DAWN1	DAWSON 3ENE	NE	0.24E	0.24
FEDC2	DENVER 7W	CO	0.24E	0.24
ELMW4	ELK MOUNTAIN	WY	0.24E	0.24
ELMM7	ELM (POWELL GARDENS)	MO	0.24	0.24
FTSK1	FT SCOTT	KS	0.24E	0.24
GRWN1	GRAND ISLAND	NE	0.24E	0.24
GRI	GRAND ISLAND AIRPORT	NE	0.24	0.24
HASN1	HAY SPRINGS 12S	NE	0.24E	0.24

HORC2	HOHNHOLZ RANCH	CO	0.24E	0.24
HLDN1	HOLDREGE	NE	0.24	0.24
IBEM7	IBERIA	MO	0.24	0.24
NEMA009	JOHNSON 2E	NE	0.24E	0.24
TMGM7	KANSAS CITY 4NW	MO	0.24E	0.24
LORI4	LORIMOR	IA	0.24	0.24
MHK	MANHATTAN MUNICPL AP	KS	0.24E	0.24
MPHK1	MAPLE HILL	KS	0.24E	0.24
SQUM7	MOUND CITY, SQUAW CR	MO	0.24E	0.24
NWOM7	NORWOOD	MO	0.24E	0.24
ODSM7	ODESSA 4SE	MO	0.24E	0.24
MOLF1	ODESSA 6SSE	MO	0.24E	0.24
IXD	OLATHE	KS	0.24	0.24
KSJO8	OVERLAND PARK 4NNE	KS	0.24E	0.24
KSJO15	OVERLAND PARK 4NNW	KS	0.24E	0.24
PAOK1	PAOLA	KS	0.24E	0.24
NEBS2	PINE RIDGE, WHITE R	SD	0.24E	0.24
RPHS2	RALPH 1N	SD	0.24E	0.24
RHSS2	REE HEIGHTS 5S	SD	0.24E	0.24
ROEM7	ROLLA 1SE	MO	0.24E	0.24

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BSHW4	RYAN PARK, BRUSH CR	WY	0.24E	0.24
SNCK1	SENECA, TURKEY CR	KS	0.24	0.24
SILS2	SISSETON 11SW	SD	0.24E	0.24
SIWS2	SISSETON 4W	SD	0.24	0.24
SONN1	STRATTON	NE	0.24E	0.24
SOHC2	STRATTON	CO	0.24E	0.24
STTC2	STRATTON	CO	0.24E	0.24
SRON1	STRATTON, REPUB R	NE	0.24E	0.24
STTN1	STRATTON, REPUB R	NE	0.24	0.24
VBLS2	VEBLEN 3NW	SD	0.24E	0.24
WHON1	WAHOO	NE	0.24E	0.24
QADK1	WAKEENEY 18S	KS	0.24E	0.24
WARS2	WARNER 12W	SD	0.24E	0.24
WTWS2	WHITEWOOD 1S	SD	0.24E	0.24
AXN	ALEXANDRIA	MN	0.23	0.23
ANGS2	ANGOSTURA DAM BELOW	SD	0.23	0.23
AHLN1	ASHLAND	NE	0.23E	0.23
ASDN1	ASHLAND #1	NE	0.23E	0.23
BFDS2	BERESFORD	SD	0.23E	0.23
BRKN1	BROKEN BOW #2	NE	0.23E	0.23
BKNN1	BROKEN BOW 2W	NE	0.23E	0.23
CPMM7	CAPLINGER MILLS 1N	MO	0.23E	0.23
CDR	CHADRON	NE	0.23	0.23
WBMN1	CHADRON 3NE	NE	0.23E	0.23
CHLI4	CLIMBING HILL	IA	0.23E	0.23
TPGC2	COMO, TARRYALL CR	CO	0.23E	0.23
CTLK1	COURTLAND	KS	0.23	0.23
DFRW4	DOUBLE FOUR RANCH	WY	0.23E	0.23
EPRK1	EMPORIA 3NW	KS	0.23	0.23
GLAM7	GLADSTONE	MO	0.23E	0.23
DCMC2	GRANT 5NW	CO	0.23E	0.23

MOPS2	GREEN RIDGE	MO	0.23E	0.23
GEEM7	GREEN RIDGE 3SW	MO	0.23	0.23
HGMS2	HIGHMORE 16N	SD	0.23E	0.23
MOJH1	HOLDEN 6S	MO	0.23E	0.23
HOYK1	HOYT	KS	0.23E	0.23
KDRS2	KIDDER	SD	0.23E	0.23
3OI	LAMONI	IA	0.23	0.23
LRBI4	LARRABEE	IA	0.23E	0.23
LIBM7	LIBERAL 1SE	MO	0.23E	0.23
LONK1	LOGAN	KS	0.23	0.23
LGVS2	LONGVALLEY	SD	0.23E	0.23
OGAS2	OGLALA 1S	SD	0.23E	0.23
OHMN1	OMAHA	NE	0.23E	0.23
TUNMB	PECULIAR 2SW	MO	0.23E	0.23
PECM7	PECULIAR 3SW	MO	0.23	0.23
RYMN1	RAYMOND 2NE	NE	0.23E	0.23
SEBC2	SEIBERT	CO	0.23E	0.23
SWRN1	SEWARD #2	NE	0.23E	0.23
SPCC2	SOUTH PLATTE, NF SOP	CO	0.23E	0.23
0124N8	STERLING 6SE	ND	0.23E	0.23
SSPM7	SWEET SPRINGS	MO	0.23E	0.23
TNGK1	TONGANOXIE 4E	KS	0.23E	0.23

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VLRW4	VALLEY 9NNE	WY	0.23E	0.23
VEBS2	VEBLEN 5SE	SD	0.23E	0.23
WESN1	WESTON 3NW	NE	0.23	0.23
WHSC2	WILD HORSE 11SSE	CO	0.23E	0.23
WIGN8	WING	ND	0.23E	0.23
BLNM7	BILLINGS 1SW	MO	0.22E	0.22
BLIM7	BLAIRSTOWN	MO	0.22E	0.22
BLRM7	BLAIRSTOWN, BIG CR	MO	0.22	0.22
BHNC2	BRIGHTON	CO	0.22E	0.22
BBW	BROKEN BOW 2W	NE	0.22	0.22
ITR	BURLINGTON	CO	0.22	0.22
CBCN1	CENTER, BAZILE CR	NE	0.22E	0.22
CRNI4	CORNING	IA	0.22	0.22
DVDN1	DAVID CITY	NE	0.22	0.22
DENN1	DENTON 4E	NE	0.22E	0.22
DRGN1	DORCHESTER, BIG BLUE	NE	0.22E	0.22
DRXM7	DREXEL	MO	0.22E	0.22
EDNS2	EDEN 6NW	SD	0.22E	0.22
ELZC2	ELIZABETH 2NE	CO	0.22E	0.22
ELNN8	ELLENDAL 9NW	ND	0.22E	0.22
FCTK1	FACT 3W	KS	0.22	0.22
FAGM7	FAIR GROVE 5SW	MO	0.22E	0.22
GEON1	GENOA, BEAVER CR	NE	0.22E	0.22
GLNW4	GLENROCK, N PLATTE R	WY	0.22E	0.22
HZTN8	HAZELTON 4NW	ND	0.22E	0.22
HNDC2	HENDERSON, S PLATTE	CO	0.22	0.22
HEI	HETTINGER	ND	0.22	0.22
HETN8	HETTINGER EXP STN	ND	0.22	0.22
HLSK1	HILLSDALE 3SW	KS	0.22	0.22

HILK1	HILLSDALE LAKE	KS	0.22E	0.22
HGOC2	HUGO 1NW	CO	0.22	0.22
HUGC2	HUGO AMRAD	CO	0.22E	0.22
KAIM7	KAISER 7E	MO	0.22E	0.22
KSYM7	KANSAS CITY 40 HWY	MO	0.22E	0.22
MKC	KANSAS CITY DWNTN AP	MO	0.22	0.22
KLOM8	KILO RAWS	MT	0.22E	0.22
KYLS2	KYLE	SD	0.22E	0.22
RYLS2	LAKE CITY 3SW	SD	0.22E	0.22
NUCK004	LAWRENCE	NE	0.22E	0.22
NUCK001	LAWRENCE	NE	0.22E	0.22
MALN1	MALCOLM	NE	0.22	0.22
MLKN8	MCCLUSKY	ND	0.22E	0.22
MLTS2	MELLETTE 7NE	SD	0.22E	0.22
MWBN1	MILLARD	NE	0.22E	0.22
MOSC2	MORRISON	CO	0.22E	0.22
MRRC2	MORRISON, BEAR CREEK	CO	0.22E	0.22
MDCK1	MOUND CITY	KS	0.22E	0.22
MROS2	MURDO 7WSW	SD	0.22E	0.22
NESK1	NESS CITY	KS	0.22E	0.22
OPAK1	O P #1500 (OLATHE)	KS	0.22E	0.22
PTHW4	PATHFINDER DAM	WY	0.22E	0.22
ROYS2	ROY LAKE ST PARK	SD	0.22	0.22
SEWN1	SEWARD	NE	0.22E	0.22

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ID	DESCRIPTION	STATE	06/21	PERIOD SUM
SMHM7	SMITHVILLE	MO	0.22E	0.22
KSDM7	STADIUM DR, BLUE R	MO	0.22	0.22
VIRS2	VIRGIL (AMRAD)	SD	0.22E	0.22
WLD	WINFIELD AIRPORT	KS	0.22	0.22
AKO	AKRON 1N	CO	0.21	0.21
ALBI4	ALBIA 3NNE	IA	0.21E	0.21
ARZM7	ARCHIE GDDS	MO	0.21E	0.21
ARHM7	ARCHIE, SO GRAND R	MO	0.21E	0.21
AURN1	AURORA	NE	0.21E	0.21
BASK1	BASEHOR 3NE	KS	0.21E	0.21
BDFI4	BEDFORD, E FK 102 R	IA	0.21	0.21
BNNN1	BENNET	NE	0.21E	0.21
CETN8	CENTER 4SE	ND	0.21E	0.21
CLAN1	CLATONIA	NE	0.21E	0.21
COLM8	COLSTRIP	MT	0.21	0.21
OLU	COLUMBUS	NE	0.21E	0.21
CTSN1	CURTIS 3NNE	NE	0.21E	0.21
DTRC2	DEER TRAIL 15ESE	CO	0.21E	0.21
DVRC2	DENVER 2SE	CO	0.21E	0.21
DBLC2	DOUBLEHEADER	CO	0.21E	0.21
ENCW4	ENCAMPMENT 10ESE	WY	0.21E	0.21
GARN1	GARLAND	NE	0.21E	0.21
SPLS2	HIGHMORE 18N	SD	0.21E	0.21
HUBN1	HUBBELL	NE	0.21E	0.21
IDAC2	IDALIA	CO	0.21	0.21
COEL51	KIOWA 3W	CO	0.21E	0.21
KRKM7	KIRKSVILLE (KIRX)	MO	0.21	0.21

KNXM7	KNOXVILLE	MO	0.21E	0.21
LAR	LARAMIE AIRPORT	WY	0.21	0.21
LAUM7	LAURIE 4W	MO	0.21	0.21
LCLN1	LINCOLN FIRE STA 4	NE	0.21E	0.21
MNLN1	MANLEY	NE	0.21E	0.21
MARN1	MARTINSBURG	NE	0.21E	0.21
MCHN8	MCHENRY 3W	ND	0.21E	0.21
MNDM7	MENDON, HICKORY BR	MO	0.21E	0.21
MLRN1	MILLARD 2NW GDDS	NE	0.21E	0.21
OPDK1	O P #1200 (MARTY LN)	KS	0.21	0.21
PRGS2	PINE RIDGE RAWS	SD	0.21E	0.21
POLM7	POLO	MO	0.21	0.21
RKRW4	ROCK RIVER 13NNW	WY	0.21E	0.21
SCDK1	SCANDIA	KS	0.21E	0.21
SNDK1	SCANDIA, REPUBLICAN	KS	0.21E	0.21
MCSK1	SHAWNEE, MILL CR	KS	0.21	0.21
SKDM7	SKIDMORE	MO	0.21E	0.21
SACM7	SPRINGFIELD, DRY SAC	MO	0.21E	0.21
SMIN1	ST MICHAEL, S LOUP R	NE	0.21E	0.21
SKTK1	STOCKTON 9N, BOW CR	KS	0.21E	0.21
STRM7	STOVER 4W	MO	0.21E	0.21
TONK1	TONGANOXIE 5SE	KS	0.21E	0.21
VPRN1	VALPARAISO	NE	0.21E	0.21
VTTS2	VICTOR	SD	0.21E	0.21
WAMK1	WAMEGO 4W	KS	0.21	0.21
WTAS2	WASTA	SD	0.21E	0.21

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WPKS2	WHITETAIL PEAK RAWS	SD	0.21	0.21
WLDM8	WILDROSE 3NW	MT	0.21E	0.21
AKNC2	AKRON 1SE	CO	0.20E	0.20
ALDN1	ALDA 1SW, WOOD R	NE	0.20E	0.20
BRLM8	BARKER LAKES	MT	0.20	0.20
BTLS2	BATESLAND	SD	0.20E	0.20
BCNI4	BEACONSFIELD	IA	0.20	0.20
BRHN1	BRAINARD	NE	0.20E	0.20
CPPM7	CAPLINGER MILLS	MO	0.20E	0.20
CEDN1	CEDAR RAPIDS	NE	0.20E	0.20
CLKN1	CLARKSON	NE	0.20E	0.20
COSW4	COLD SPRINGS	WY	0.20	0.20
COJF32	CONIFER 3E	CO	0.20E	0.20
DELK1	DELIA 3E, SOLDIER CR	KS	0.20E	0.20
CODN88	DENVER 5S	CO	0.20E	0.20
DNR	DENVER STAPLETON AP	CO	0.20E	0.20
CDOK1	DESOTO, CEDAR CR	KS	0.20	0.20
DIK	DICKINSON AIRPORT	ND	0.20	0.20
SODC2	DILLON CO	CO	0.20E	0.20
DREM7	DRESDEN (DNR)	MO	0.20	0.20
DUNM7	DUNNEGAN	MO	0.20E	0.20
EXSM7	EXCELSIOR SPRINGS 4S	MO	0.20	0.20
FOXN8	FOXHOLM 7N	ND	0.20E	0.20
FNDN1	FRIEND 3E	NE	0.20	0.20
GEOC2	GEORGETOWN	CO	0.20E	0.20

COJF257	GOLDEN 4NNW	CO	0.20E	0.20
COJF16	GOLDEN 4WNW	CO	0.20E	0.20
WEBS011	GUIDE ROCK 9N	NE	0.20E	0.20
HRRM7	HARRISONVILLE	MO	0.20E	0.20
HYSN1	HAY SPRINGS	NE	0.20E	0.20
HILS2	HILL CITY 5S AMRAD	SD	0.20E	0.20
HUMM7	HUMANSVILLE 2SE	MO	0.20E	0.20
KBRM7	KC BLUE RIDGE BLVD	MO	0.20	0.20
KEYS2	KEYSTONE	SD	0.20E	0.20
LLRW4	LARAMIE, LARAMIE R	WY	0.20E	0.20
COMR63	LEEDER 10N	CO	0.20E	0.20
LMHM8	LEMHI RIDGE	MT	0.20	0.20
LWSW4	LEWIS LAKE DIVIDE	WY	0.20	0.20
LGPS2	LODGEPOLE 5SW	SD	0.20E	0.20
LSNN8	MINOT 3SE	ND	0.20E	0.20
MLI	MOLINE	IL	0.20	0.20
MSPM8	MOSS PEAK	MT	0.20	0.20
ROCK004	NEWPORT 11S	NE	0.20E	0.20
NOIM8	NOISY BASIN	MT	0.20	0.20
OSEI4	OSCEOLA	IA	0.20	0.20
PRLK1	PARALLEL	KS	0.20E	0.20
PLDN1	PLEASANTDALE 2NW	NE	0.20	0.20
PKKM7	POLK 2NE	MO	0.20E	0.20
PLKM7	POLK 2NE, LINDLEY CR	MO	0.20E	0.20
PCUS2	PORCUPINE	SD	0.20	0.20
RCYS2	RAPID CITY, RAPID CR	SD	0.20	0.20
RAYN1	RAYMOND 4W	NE	0.20E	0.20
RIFM7	RICH FOUNTAIN	MO	0.20E	0.20

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RICM7	RICHMOND, CROOKED R	MO	0.20E 0.20
MBLW4	SARATOGA 16SE	WY	0.20E 0.20
SCHN1	SCHUYLER	NE	0.20 0.20
KSJ016	SHAWNEE 4E	KS	0.20E 0.20
SBCW4	SOUTH BRUSH CREEK	WY	0.20 0.20
STTM7	ST THOMAS, OSAGE R	MO	0.20 0.20
STZM7	STOCKTON, SAC R	MO	0.20E 0.20
TOBN1	TOBIAS	NE	0.20E 0.20
TWNW4	TOWNSEND CREEK	WY	0.20 0.20
TNDW4	TOWNSEND CREEK	WY	0.20E 0.20
WMAK1	WASHINGTON	KS	0.20 0.20
COCH27	WILD HORSE 1NW	CO	0.20E 0.20
WTRI4	WINTERSET 2NNW	IA	0.20 0.20
EVES2	ABERDEEN 2E	SD	0.19E 0.19
BKNK1	BAZINE 6NW	KS	0.19E 0.19
BEBN1	BENNINGTON 2NW	NE	0.19E 0.19
COAR155	CENTENNIAL 6W	CO	0.19E 0.19
DWEN1	DEWEESE, LTL BLUE R	NE	0.19E 0.19
EGLC2	EAGLE 13W	CO	0.19E 0.19
FTNK1	FULTON, LTL OSAGE R	KS	0.19E 0.19
ADAM008	GLENVIL 2WSW	NE	0.19E 0.19
GRBN8	GRASSY BUTTE 2ENE	ND	0.19E 0.19
HLIN8	HALLIDAY	ND	0.19E 0.19

HSI	HASTINGS	NE	0.19	0.19
HMAN1	HERMAN	NE	0.19E	0.19
LKMS2	HIGHMORE 12NE	SD	0.19E	0.19
HUMN1	HUMPHREY	NE	0.19E	0.19
JUCK1	JUNCTION CITY 4SSW	KS	0.19E	0.19
KGLM7	KINGSVILLE	MO	0.19E	0.19
KCCC2	KIT CARSON 9NNE	CO	0.19	0.19
DMCW4	LARAMIE 8N	WY	0.19E	0.19
CODG32	LITTLETON 8ESE	CO	0.19E	0.19
MRTK1	MARMATON, MARMATON R	KS	0.19E	0.19
MHE	MITCHELL AIRPORT	SD	0.19E	0.19
NDLC2	NEDERLAND 2NNE	CO	0.19E	0.19
OPBK1	O P #1700 (JCCC)	KS	0.19E	0.19
OKDN1	OAKDALE	NE	0.19	0.19
OJC	OLATHE	KS	0.19	0.19
KSJ011	OLATHE 4SE	KS	0.19E	0.19
ORLS2	ORAL	SD	0.19	0.19
OSCN1	OSCEOLA	NE	0.19	0.19
LNTC2	PARKER 7WNW AMRAD	CO	0.19E	0.19
IEN	PINE RIDGE	SD	0.19	0.19
PNES2	PINE RIDGE 2SE	SD	0.19E	0.19
PLTM7	PLATTSBURG	MO	0.19E	0.19
UNRS2	RAPID CITY WFO	SD	0.19E	0.19
UNR	RAPID CITY WFO	SD	0.19E	0.19
RONM7	RAYMORE	MO	0.19E	0.19
SAGM7	RAYMORE	MO	0.19E	0.19
RAMM7	RAYMORE	MO	0.19	0.19
RWYM7	RIDGEWAY	MO	0.19	0.19
RUSN1	RUSHVILLE	NE	0.19E	0.19
SGF	SPRINGFIELD AIRPORT	MO	0.19	0.19

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STAN8	STANLEY 3NNW	ND	0.19E	0.19
SMNM7	SUMNER 3SW	MO	0.19E	0.19
WGOK1	WAMEGO	KS	0.19E	0.19
WMGK1	WAMEGO #2, KANSAS R	KS	0.19E	0.19
WASS2	WASTA 3E, CHEYENNE R	SD	0.19	0.19
WMLK1	WESTMORELAND	KS	0.19E	0.19
ETH	WHEATON	MN	0.19E	0.19
COEL29	AGATE 4NW	CO	0.18E	0.19
CPR	CASPER INTL AIRPORT	WY	0.18	0.19
COAR131	CHERRY HILLS VILLAGE	CO	0.18E	0.19
CODN1	CODY	NE	0.18E	0.19
COCM7	COLE CAMP 9SE	MO	0.18E	0.19
COLN1	COLUMBUS 3NE	NE	0.18E	0.19
DESK1	DE SOTO	KS	0.18	0.19
DUBN1	DUBOIS	NE	0.18E	0.19
EDWM7	EDWARDS 4ENE	MO	0.18E	0.19
EWDK1	EDWARDSVILLE 3NNW	KS	0.18E	0.19
ELIN1	ELI	NE	0.18E	0.19
BEVW4	ENCAMPMENT, BEAVER C	WY	0.18E	0.19
FAIN8	FAIRFIELD	ND	0.18E	0.19
FRMN1	FAIRMONT	NE	0.18E	0.19

COSU4	FRISCO 1N	CO	0.18E	0.19
GRIN1	GRAND ISLAND 5SE	NE	0.18E	0.19
HMLM7	HAMILTON 2W	MO	0.18	0.19
HSTN1	HASTINGS 4N	NE	0.18E	0.19
GID	HASTINGS 4N	NE	0.18E	0.19
HOYC2	HOYT 1S	CO	0.18E	0.19
HYSM8	HYSHAM	MT	0.18E	0.19
IDSC2	IDAHO SPRINGS 1NNW	CO	0.18E	0.19
INDM7	INDEPENDENCE, ADAIR C	MO	0.18	0.19
RCKM7	INDEPENDENCE, ROCK CR	MO	0.18E	0.19
JMEM7	JAMESON (DNR)	MO	0.18	0.19
KBPM7	KANSAS CTY BLUE PKWY	MO	0.18E	0.19
WYJN13	KAYCEE 17NNW	WY	0.18	0.19
KCWM7	KC (NEW SANTA FE)	MO	0.18	0.19
TFCM7	KC TOWN FORK CREEK	MO	0.18E	0.19
LADS2	LADNER 9SW	SD	0.18E	0.19
LWD	LAMONI	IA	0.18	0.19
MOON1	MOOREFIELD	NE	0.18E	0.19
MLSN1	MULLEN 15S	NE	0.18E	0.19
NAPM7	NAPOLEON, MISSOURI R	MO	0.18	0.19
PHLN1	PHILLIPS 4SE	NE	0.18E	0.19
LPPM7	PLATTSBURG 2E	MO	0.18E	0.19
PWLN8	POWERS LAKE 1N	ND	0.18E	0.19
RIHM7	RICH HILL	MO	0.18E	0.19
RCMM7	RICHMOND 3S	MO	0.18E	0.19
RLLM7	ROLLA	MO	0.18E	0.19
ROXC2	ROXBOROUGH ST PARK	CO	0.18E	0.19
SHWK1	SHAWNEE 2S	KS	0.18E	0.19
SNZM7	SUMNER 2SW, GRAND R	MO	0.18E	0.19
SWLM8	SWAN LAKE	MT	0.18E	0.19
WLDC2	WALDEN	CO	0.18E	0.19
WADC2	WALDEN	CO	0.18E	0.19

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WATN8	WATFORD CITY 14S	ND	0.18	0.19
WSTN1	WESTERN 2W	NE	0.18	0.19
COJF121	WHEATRIDGE	CO	0.18E	0.19
WLDM7	WILLARD 6NE	MO	0.18E	0.19
AGAC2	AGATE	CO	0.17E	0.17
AKRC2	AKRON 4E	CO	0.17E	0.17
COAD104	BARR LAKE 2E	CO	0.17E	0.17
BEGM7	BLUE SPRINGS	MO	0.17E	0.17
BUCM7	BUCKNER	MO	0.17E	0.17
BUFM7	BUFFALO 2N	MO	0.17	0.17
MOFSA013	BUTLER 1SSW	MO	0.17E	0.17
COJF61	CHATFIELD DAM 2NW	CO	0.17E	0.17
CHEC2	CHEESMAN DAM	CO	0.17	0.17
COLF003	CLARKSON 8SSW	NE	0.17E	0.17
CYTS2	CLAYTON, WOLF CR	SD	0.17E	0.17
RIPS2	DEADMAN GULCH	SD	0.17	0.17
KCDK1	DESOTO, KILL CR	KS	0.17	0.17
ELSM7	ELDORADO SPRINGS 12E	MO	0.17E	0.17
EDDM7	ELDRIDGE 3E	MO	0.17E	0.17

GLLM7	GALLATIN 1W	MO	0.17E	0.17
GAZM7	GALLATIN, GRAND R	MO	0.17E	0.17
GSCM7	GASCONADE, MISSOURI R	MO	0.17E	0.17
GRGM7	GRAND GLAISE	MO	0.17E	0.17
HVRS2	HOOVER	SD	0.17E	0.17
IPDM7	INDEPENDENCE #2	MO	0.17	0.17
BRTM7	INDEPENDENCE 39TH ST	MO	0.17E	0.17
LEEM7	JAMES A REED WLR	MO	0.17E	0.17
KWAM7	KANSAS CTY WILSON AV	MO	0.17E	0.17
LRMW4	LARAMIE 4SE	WY	0.17E	0.17
WEBS003	LAWRENCE 4WSW	NE	0.17E	0.17
LSSM7	LEES SUMMIT 2SE	MO	0.17	0.17
LEXM7	LEXINGTON 3E	MO	0.17E	0.17
LNCN1	LINCOLN 4SE	NE	0.17E	0.17
LNDN1	LINCOLN FIRE STA 6	NE	0.17E	0.17
LRM7	LOWRY CITY	MO	0.17E	0.17
MODK1	MOUND CITY 1SSW	KS	0.17E	0.17
NLSK1	NILES, SOLOMON R	KS	0.17E	0.17
ONAK1	ONAGA	KS	0.17E	0.17
PHIM8	PHILIPSBURG 2S	MT	0.17E	0.17
HAWS2	RAPID CR BELOW DITCH	SD	0.17	0.17
REDN1	RED CLOUD	NE	0.17	0.17
HITC2	ROCKY MTN ARSENAL	CO	0.17E	0.17
ROLM7	ROLLA 3NW	MO	0.17E	0.17
RSSN8	ROSS	ND	0.17E	0.17
COEL25	SIMLA	CO	0.17E	0.17
SIMC2	SIMLA	CO	0.17E	0.17
SSTS2	SISSETON (AMRAD)	SD	0.17E	0.17
STWK1	STILWELL	KS	0.17E	0.17
SLYK1	STILWELL 1N	KS	0.17	0.17
SYKN8	SYKESTON	ND	0.17E	0.17
TSEK1	TOPEKA SW 37TH ST	KS	0.17E	0.17
VIGS2	VIRGIL 2NW	SD	0.17E	0.17
VNAC2	VONA	CO	0.17E	0.17

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ID	DESCRIPTION	STATE	06/21 SUM
WGEC2	WHEAT RIDGE	CO	0.17E 0.17
0545N8	BATTLEVIEW 5SW	ND	0.16E 0.16
BRIC2	BRIGHTON 3SE	CO	0.16E 0.16
BRSS2	BRISTOL 5SW	SD	0.16E 0.16
CABM7	CABOOL 4SW	MO	0.16E 0.16
CWWW4	CASPER WATER PLANT	WY	0.16E 0.16
CPRW4	CASPER, NO PLATTE R	WY	0.16 0.16
CPCM8	COPPER CAMP	MT	0.16E 0.16
DSOK1	DESOTO, KANSAS R	KS	0.16 0.16
EGTM7	EDGERTON	MO	0.16E 0.16
HAKM8	EKALAKA 28SSE	MT	0.16E 0.16
ELGN1	ELGIN	NE	0.16E 0.16
ERLN1	EMERALD 2NW	NE	0.16E 0.16
FRLM7	FORDLAND 6NW	MO	0.16E 0.16
CCLC2	GEORGETOWN 5SSW	CO	0.16E 0.16
GRDN1	GORDON 3W	NE	0.16 0.16
GORN1	GORDON 6N	NE	0.16E 0.16

HVNS2	HOVEN	SD	0.16E	0.16
KRYM7	KEARNEY 2E	MO	0.16E	0.16
KIOC2	KIOWA	CO	0.16E	0.16
LXGM7	LEXINGTON 2SSW	MO	0.16	0.16
LNGN1	LINCOLN FIRE STA 9	NE	0.16E	0.16
EEO	MEEKER AIRPORT	CO	0.16	0.16
MLFK1	MILFORD DAM	KS	0.16E	0.16
MIB	MINOT AFB	ND	0.16	0.16
RNMS2	MT RUSHMORE NATL MEM	SD	0.16E	0.16
EWK	NEWTON AIRPORT	KS	0.16E	0.16
ORCN1	ORCHARD 1NW	NE	0.16E	0.16
OSGM7	OSAGE BEACH 2SW	MO	0.16E	0.16
PKCC2	PARK CONE	CO	0.16E	0.16
PRKM7	PARKVILLE 2N	MO	0.16E	0.16
PHGM8	PHILIPSBURG RAWS	MT	0.16E	0.16
RCTS2	RAPID CITY (AMRAD)	SD	0.16E	0.16
SEWS2	RAPID CITY 7SE	SD	0.16	0.16
ID8S2	REDFIELD, TURTLE CR	SD	0.16E	0.16
ANDW4	SOUTH PASS CITY 8WSW	WY	0.16E	0.16
SPTC2	SOUTH PLATTE GDDS	CO	0.16E	0.16
TULN8	TURTLE LAKE	ND	0.16E	0.16
UVAM7	UNITY VILLAGE 3ESE	MO	0.16	0.16
WSHN8	WASHBURN, TURTLE CR	ND	0.16E	0.16
APLMB	APLEY, TED	MO	0.15E	0.16
ARDS2	ARDMORE 2N	SD	0.15E	0.16
BEOM7	BELTON 2W	MO	0.15E	0.16
BGHM8	BIG HORN 4SW GDDS	MT	0.15E	0.16
BLSM7	BLUE SPRINGS	MO	0.15E	0.16
BLUM7	BLUE SPRINGS #2	MO	0.15E	0.16
BNRK1	BONNER SPRINGS	KS	0.15	0.16
BOYN1	BOYSTOWN	NE	0.15E	0.16
0885N8	BREMEN 4NW	ND	0.15E	0.16
MOCM2	BRUMLEY 6SW	MO	0.15E	0.16
GCRC2	CABIN CREEK	CO	0.15	0.16
CBOM7	CABOOL 2NW	MO	0.15E	0.16
CMMM7	CAMDENTON 9SW	MO	0.15E	0.16

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COXMB	COX, ROBERT	MO	0.15E	0.16
DKRC2	DECKERS	CO	0.15E	0.16
NRJC2	DECKERS 7S	CO	0.15E	0.16
NJRC2	DECKERS 7S RAWS	CO	0.15E	0.16
COAR42	DENVER 6S	CO	0.15	0.16
DNWW4	DINWOODY	WY	0.15E	0.16
EMDN1	EMERALD 1W	NE	0.15E	0.16
GFDN8	GLENFIELD	ND	0.15E	0.16
DLSM7	GRAIN VALLEY	MO	0.15	0.16
HARS2	HARDING 3SE	SD	0.15E	0.16
HRYM7	HERMANN GDDS	MO	0.15E	0.16
HLTM7	HOLT 3E	MO	0.15E	0.16
IDCM7	INDEPENDENCE	MO	0.15E	0.16
KSLC2	KASSLER	CO	0.15E	0.16
RUSS2	KEYSTONE 5SE	SD	0.15E	0.16

LKCM7	LAKE CITY, LTL BLUE	MO	0.15E	0.16
LKJM7	LAKE JACOMO	MO	0.15E	0.16
LEBM7	LEBANON 6N	MO	0.15E	0.16
LXT	LEES SUMMIT AIRPORT	MO	0.15	0.16
LCNM7	LINCOLN 2NE	MO	0.15E	0.16
LINM7	LINNEUS	MO	0.15E	0.16
LNNM7	LINNEUS 3SE	MO	0.15	0.16
COAR90	LITTLETON 1S	CO	0.15E	0.16
NLIN1	NELIGH, ELKHORN R	NE	0.15E	0.16
NWEN8	NEW ENGLAND	ND	0.15E	0.16
OLAK1	OLATHE 3E	KS	0.15E	0.16
ONNS2	ONIDA 22NE	SD	0.15E	0.16
OSCM7	OSCEOLA	MO	0.15E	0.16
RLKC2	RED FEATHR LAKES 2SE	CO	0.15E	0.16
RBBM7	ROBY 3SE	MO	0.15E	0.16
SHER003	RUSHVILLE 13S	NE	0.15E	0.16
RUTC2	RUSTIC 9WSW	CO	0.15	0.16
SHYN8	SHEYENNE	ND	0.15E	0.16
SLVM8	SILVER LAKE	MT	0.15E	0.16
SPBM8	SPOTTED BEAR RAWS	MT	0.15E	0.16
SBCM7	SPRING BRANCH CREEK	MO	0.15	0.16
TOWC2	TOWER	CO	0.15E	0.16
ECKS2	ABERDEEN 2NE	SD	0.14E	0.14
KSDS2	ABERDEEN 3SW	SD	0.14E	0.14
ABES2	ABERDEEN 4NW	SD	0.14E	0.14
KGIS2	ABERDEEN 5W	SD	0.14E	0.14
AWSW4	ADAMS RAWS	WY	0.14	0.14
ALVW4	ALCOVA 17NW	WY	0.14E	0.14
COPK5	ALMA 3N	CO	0.14E	0.14
AMTM7	AMITY 4NE	MO	0.14	0.14
ALYN8	ASHLEY	ND	0.14E	0.14
BARM7	BARNETT 2E	MO	0.14E	0.14
BETM7	BELTON	MO	0.14E	0.14
BNYC2	BONNY DAM	CO	0.14E	0.14
BRNS2	BRITTON	SD	0.14E	0.14
BRIS2	BRITTON	SD	0.14E	0.14
CDTM7	CAMDENTON 2NW	MO	0.14E	0.14
CMZM7	CAPLINGER MILLS GDDS	MO	0.14E	0.14

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CHOM7	CHILLICOTHE RAWS	MO	0.14	0.14
DMRK1	DAMAR, SF SOLOMON R	KS	0.14	0.14
HIGC2	DENVER	CO	0.14E	0.14
DURK1	DURHAM	KS	0.14E	0.14
DUMK1	DURHAM	KS	0.14E	0.14
FHMN8	FOXHOLM 7N	ND	0.14E	0.14
GFDM7	GREENFIELD 4SE	MO	0.14E	0.14
HSCS2	HERMOSA 7N	SD	0.14E	0.14
HIGS2	HIGHMORE 6SSE AMRAD	SD	0.14E	0.14
HLBK1	HILLSBORO	KS	0.14	0.14
KRNM7	KEARNEY 3E	MO	0.14E	0.14
GNKS2	KEYSTONE 1SW	SD	0.14	0.14
LBAM7	LEBANON 7W	MO	0.14E	0.14

MRHM7	MARSHALL	MO	0.14	0.14
MELM8	MELSTONE	MT	0.14E	0.14
MOFN8	MOFFIT, LONG LAKE CR	ND	0.14E	0.14
NLHN1	NELIGH	NE	0.14E	0.14
NEOK1	NEOSHA RAPIDS	KS	0.14E	0.14
NRPK1	NEOSHO RAPIDS	KS	0.14E	0.14
HRAN8	NEW HRADEC, GREEN R	ND	0.14E	0.14
NFCW4	NORTH FRENCH CREEK	WY	0.14E	0.14
NEWK1	NORWAY	KS	0.14E	0.14
KSJO14	OLATHE 3ENE	KS	0.14E	0.14
OVNN1	OMAHA 9NW	NE	0.14E	0.14
RSIS2	SILVER CITY 1W	SD	0.14	0.14
STFK1	ST FRANCIS 8NW	KS	0.14E	0.14
ORPK1	STANLEY	KS	0.14E	0.14
TSFK1	TOPEKA SW 29TH ST	KS	0.14E	0.14
UTYM7	UNITY VILLAGE	MO	0.14E	0.14
VRLS2	VIRGIL 9SW	SD	0.14E	0.14
WWKN8	WARWICK	ND	0.14E	0.14
ARPN1	ARAPAHOE, MUDDY CR	NE	0.13E	0.13
BPKS2	BLIND PARK #2	SD	0.13E	0.13
BSZM7	BLUE SPRINGS DAM	MO	0.13E	0.13
BRRM8	BRENNER RAWLS	MT	0.13E	0.13
BGHC2	BRIGHTON 5WNW	CO	0.13E	0.13
BRLS2	BRISTOL 7S	SD	0.13E	0.13
BEKM7	BROOKFIELD	MO	0.13E	0.13
BRKM7	BROOKFIELD	MO	0.13E	0.13
BEAS2	BUFFALO GAP 2S	SD	0.13E	0.13
BUFC2	BUFFALO PARK	CO	0.13E	0.13
CMBN1	CAMBRIDGE	NE	0.13	0.13
CAMN1	CAMBRIDGE, REPUB R	NE	0.13E	0.13
CSNI4	CARSON 3NNE	IA	0.13E	0.13
CERN1	CERESCO 6SE, ROCK CR	NE	0.13E	0.13
CMBI4	COLUMBIA	IA	0.13E	0.13
DNDN8	DICKINSON DAM	ND	0.13E	0.13
EFLM7	EAST FORK LTL BLUE R	MO	0.13	0.13
COEL48	ELBERT 3ESE	CO	0.13E	0.13
KIPC2	EVERGREEN 2SSE	CO	0.13E	0.13
FREM7	FREEDOM	MO	0.13	0.13
GNVN1	GENEVA	NE	0.13E	0.13
HANK1	HANOVER 4S	KS	0.13E	0.13

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HECS2	HECLA	SD	0.13E	0.13
JRMM7	JEROME, GASCONADE R	MO	0.13E	0.13
COEL46	KIOWA 13ENE	CO	0.13E	0.13
LWRW4	LARAMIE 2NW	WY	0.13E	0.13
LEFW4	LARAMIE 2WSW	WY	0.13E	0.13
LRLM7	LEES SUMMIT ROAD	MO	0.13	0.13
SODK1	LENEXA #2	KS	0.13E	0.13
LBEM7	LIBERTY 3NW	MO	0.13E	0.13
MARM7	MARSHFIELD 1N	MO	0.13E	0.13
MCVN8	MCVILLE	ND	0.13E	0.13
MBOW4	MEDICINE BOW	WY	0.13E	0.13

MBFW4	MEDICINE BOW	WY	0.13E	0.13
MERN1	MERRIMAN	NE	0.13E	0.13
MTNM7	MOUNTAIN GROVE	MO	0.13E	0.13
BRRK1	OVERLAND PARK,BLUE R	KS	0.13	0.13
PVRS2	PEEVER 8NNE	SD	0.13	0.13
PHLM7	PLEASANT HILL	MO	0.13E	0.13
PLSM7	PLEASANT HILL 1E	MO	0.13E	0.13
PLHM7	PLEASANT HILL MBRFC	MO	0.13	0.13
RESC2	RABBIT EARS	CO	0.13E	0.13
COLR228	RED FEATHER LAKES	CO	0.13E	0.13
RCCM7	RICHARDS, MARMATON R	MO	0.13E	0.13
ROBM7	ROBY	MO	0.13E	0.13
DMO	SEDALIA	MO	0.13	0.13
SSSS2	SISSETON	SD	0.13E	0.13
8D3	SISSETON	SD	0.13	0.13
SPGM7	SPRINGFIELD	MO	0.13E	0.13
WTNM7	WARRENTON 1N	MO	0.13	0.13
MOFSA219	WARRENTON 1WSW	MO	0.13E	0.13
AERK1	ALEXANDER 4W	KS	0.12E	0.13
ARHN1	ARTHUR	NE	0.12E	0.13
BABM8	BABB 4SW	MT	0.12E	0.13
COPK69	BAILEY 6NNW	CO	0.12E	0.13
BARK1	BARNES	KS	0.12E	0.13
BANK1	BARNES, LTL BLUE R	KS	0.12	0.13
BELS2	BELLE FOURCHE	SD	0.12E	0.13
RWRS2	BELLE FOURCHE 1NW	SD	0.12	0.13
BJI	BEMIDJI AIRPORT	MN	0.12E	0.13
BRUM7	BRUNSWICK	MO	0.12E	0.13
BNWM7	BRUNSWICK,MISSOURI R	MO	0.12E	0.13
BBRW4	BUFFALO BILL ABV	WY	0.12E	0.13
BGPS2	BUFFALO GAP	SD	0.12E	0.13
BFGS2	BUFFALO GAP,CHEYENNE	SD	0.12E	0.13
BGFS2	BUFFALO GAP,CHEYENNE	SD	0.12E	0.13
CLDW4	BURRIS 10SW	WY	0.12E	0.13
0759N8	DICKINSON 2NW	ND	0.12E	0.13
DCKN8	DICKINSON EXP STN	ND	0.12	0.13
ESTC2	EASTONVILLE 2NNW	CO	0.12E	0.13
EWDN1	ELKHORN 4SE	NE	0.12E	0.13
ENLC2	ENGLEWOOD	CO	0.12E	0.13
HEMN1	HEMINGFORD	NE	0.12E	0.13
HRNM7	HERMANN, MISSOURI R	MO	0.12E	0.13
HSMM8	HYSHAM 25SSE	MT	0.12E	0.13

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COCC15	IDAHO SPRINGS 1NNE	CO	0.12E	0.13
KCRM7	KANSAS CITY EAST	MO	0.12E	0.13
KSHC2	KENOSHA PASS	CO	0.12E	0.13
KITC2	KITTREDGE GDDS	CO	0.12E	0.13
LDVC2	LEADVILLE (AMRAD)	CO	0.12E	0.13
HCMC2	LEADVILLE 8SW	CO	0.12E	0.13
MRTS2	MARTIN	SD	0.12E	0.13
LITS2	MARTIN, LTL WHITE R	SD	0.12	0.13
MRSC2	MORRISON 3SSE AMRAD	CO	0.12E	0.13

MLNN1	MULLEN	NE	0.12E	0.13
MHN	MULLEN	NE	0.12E	0.13
OPFK1	O P #1400 (WATFD PL)	KS	0.12E	0.13
OMAN1	OMAHA STANDNG BEAR L	NE	0.12E	0.13
PACK1	PALCO	KS	0.12E	0.13
PRMS2	PARMELEE 6W	SD	0.12E	0.13
PTDW4	PATHFINDER DAM	WY	0.12E	0.13
RIDM8	RIDGEWAY 1S	MT	0.12E	0.13
RIL	RIFLE	CO	0.12	0.13
SACM8	SACO 7NE, MILK R	MT	0.12	0.13
STAK1	STANLEY 3S DCP	KS	0.12	0.13
WARMB	WARREN, CRAIG	KS	0.12E	0.13
DODW4	WHEATLAND 28WSW	WY	0.12E	0.13
MGBC2	ALMA 5N	CO	0.11E	0.12
ANAM8	ANACONDA	MT	0.11E	0.12
BDE	BAUDETTE AIRPORT	MN	0.11E	0.12
BKRW4	BECHLER RANGER STA	WY	0.11E	0.12
BLFN8	BELFIELD 1SW	ND	0.11E	0.12
BLKM7	BLUE LICK	MO	0.11	0.12
BLVM7	BLUE LICK, BLACKWATER	MO	0.11E	0.12
DINW4	BURRIS, DINWOODY CR	WY	0.11E	0.12
CNSM7	CAINSVILLE	MO	0.11	0.12
CHLM7	CHILLICOTHE	MO	0.11E	0.12
CHUM7	CHULA, MUDDY CR	MO	0.11E	0.12
CLYN1	CLAY CENTER 6ESE	NE	0.11	0.12
COU	COLUMBIA	MO	0.11	0.12
CLBN1	COLUMBUS, SHELL CR	NE	0.11E	0.12
ACHC2	DECKERS, SO PLATTE R	CO	0.11E	0.12
TRTC2	DECKERS, TROUT CR	CO	0.11E	0.12
DVNC2	DENVER WATER DEPT	CO	0.11	0.12
EWRM7	EDWARDS 10N	MO	0.11E	0.12
GAKN8	GARRISON ABV SKUNK	ND	0.11E	0.12
GRNN1	GREENWOOD, SALT CR	NE	0.11E	0.12
GRVW4	GROS VENTRE SUMMIT	WY	0.11E	0.12
GDRN1	GUIDE ROCK	NE	0.11E	0.12
HBRN1	HEBRON	NE	0.11	0.12
HBNN1	HEBRON #2	NE	0.11E	0.12
HEBN1	HEBRON #2	NE	0.11E	0.12
LNSM7	LINNEUS, LOCUST CR	MO	0.11	0.12
LTTW4	LITTLE WARM SPRINGS	WY	0.11E	0.12
LTTC2	LITTLETON	CO	0.11E	0.12
LNZM7	LONGVIEW DAM	MO	0.11E	0.12
LNGM7	LONGVIEW DAM BELOW	MO	0.11E	0.12
MCCM8	MILES CITY RAWS	MT	0.11E	0.12

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MLNS2	MILLTOWN, JAMES R	SD	0.11E	0.12
UMN	MONETT	MO	0.11E	0.12
COBO34	NEDERLAND 1WNW	CO	0.11	0.12
NFLM7	NEW FLORENCE #2	MO	0.11E	0.12
PRMI4	PROMISE CITY 6NW	IA	0.11	0.12
RWL	RAWLINS	WY	0.11	0.12
RLSW4	RAWLINS 1N	WY	0.11E	0.12

RLNW4	RAWLINS 1NE	WY	0.11E	0.12
RDRN8	REEDER	ND	0.11E	0.12
SNCS2	SENECA 15SSE	SD	0.11E	0.12
STVM7	STOVER	MO	0.11E	0.12
URHM7	URICH 1S, SO GRAND R	MO	0.11E	0.12
VERC2	VERNON 4SW	CO	0.11E	0.12
STCK1	WEBSTER DAM	KS	0.11E	0.12
WHNC2	WILD HORSE 6N	CO	0.11E	0.12
SWEW4	ALCOVA, SWEETWATER R	WY	0.10	0.11
MOBN7	ASHLAND 4E	MO	0.10E	0.11
BLDW4	BALD MOUNTAIN	WY	0.10	0.11
FRON005	BARTLEY 9NNW	NE	0.10E	0.11
MOGR20	BATTLEFIELD	MO	0.10E	0.11
BRDS2	BEAR RIDGE	SD	0.10E	0.11
BLTM8	BEARTOOTH LAKE	MT	0.10	0.11
BLTW4	BEARTOOTH LAKE	WY	0.10	0.11
BFIS2	BELLE FOURCHE DIV	SD	0.10E	0.11
BGEW4	BIG GOOSE	WY	0.10	0.11
BLWW4	BLACKWATER	WY	0.10	0.11
BCHM7	BOSCHERTOWN 3SW	MO	0.10E	0.11
BOXM8	BOX CANYON	MT	0.10	0.11
BRNC2	BRANDON	CO	0.10E	0.11
BRWM7	BROWNING, LOCUST CR	MO	0.10E	0.11
BRCM7	BRUNSWICK	MO	0.10	0.11
BRNM7	BRUNSWICK, GRAND R	MO	0.10E	0.11
BRJW4	BURGESS JUNCTION	WY	0.10	0.11
CANW4	CANYON 2SSW	WY	0.10	0.11
CAYW4	CANYON RANGER STA	WY	0.10E	0.11
CFDC2	CHATFIELD DAM	CO	0.10E	0.11
CHRW4	CHRISTINA LAKE	WY	0.10E	0.11
CLFM7	CLIFTON CITY	MO	0.10E	0.11
CMDM8	CLOVER MEADOW	MT	0.10	0.11
SFOW4	CODY 19SW	WY	0.10E	0.11
COYW4	CODY 21SW	WY	0.10E	0.11
COLC2	COLUMBINE LODGE	CO	0.10	0.11
CPSC2	COLUMBINE PASS	CO	0.10	0.11
COPM8	COPPER BOTTOM	MT	0.10	0.11
NGPC2	COWDREY 6NW	CO	0.10	0.11
CRYM8	CRYSTAL LAKE	MT	0.10	0.11
DALM8	DALY CREEK	MT	0.10	0.11
DBOM8	DEARBORN RAWS	MT	0.10	0.11
DPKW4	DEER PARK	WY	0.10	0.11
CODN25	DENVER 2ESE	CO	0.10E	0.11
DMNC2	DENVER MUSEUM	CO	0.10E	0.11
ZOFK1	DIGHTON	KS	0.10E	0.11
DVDW4	DIVIDE PEAK	WY	0.10	0.11

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DRLC2	DRY LAKE	CO	0.10	0.11
COEL5	ELIZABETH 2NW	CO	0.10E	0.11
ELIC2	ELIZABETH 2NW	CO	0.10E	0.11
ELKC2	ELK RIVER	CO	0.10	0.11
EMCM8	EMERY CR SNT	MT	0.10	0.11

SPDC2	ENGLEWOOD	CO	0.10E	0.11
COLR223	ESTES PARK 4SSW	CO	0.10E	0.11
FERS2	FERNEY	SD	0.10E	0.11
FTCC2	FORT COLLINS 9NW	CO	0.10	0.11
FOXC2	FOXTON 2N	CO	0.10E	0.11
FNKC2	FRANKTOWN 3E	CO	0.10E	0.11
FRUS2	FRUITDALE 3NW	SD	0.10E	0.11
GRCW4	GRANITE CREEK	WY	0.10	0.11
GRSW4	GRASSY LAKE	WY	0.10	0.11
GRLW4	GRASSY LAKE DAM	WY	0.10E	0.11
HANM8	HAND CREEK	MT	0.10	0.11
HRVM7	HARVESTER 2SW	MO	0.10	0.11
HINM8	HINSDALE 4SW	MT	0.10E	0.11
HOOC2	HOOSIER PASS	CO	0.10	0.11
HDFN8	HURDSFIELD 8SW	ND	0.10E	0.11
INCW4	INDIAN CREEK	WY	0.10	0.11
ISWI1	ISLAND PARK	ID	0.10E	0.11
ISPI1	ISLAND PARK 9ENE	ID	0.10	0.11
ITHN1	ITHACA, WAHOO CR	NE	0.10E	0.11
JELW4	JELM 2S	WY	0.10E	0.11
KCDM7	KC (HANNIBAL BRIDGE)	MO	0.10	0.11
WATM7	KC WATTS MILLS	MO	0.10E	0.11
GAKS2	KEYSTONE 4SW	SD	0.10E	0.11
COEL9	KIOWA 14ENE	CO	0.10E	0.11
KRAN1	KRAMER 2E	NE	0.10E	0.11
LVRM8	LAKEVIEW RIDGE	MT	0.10	0.11
LXV	LEADVILLE 2SW	CO	0.10	0.11
LXVC2	LEADVILLE 2SW	CO	0.10E	0.11
LBBM7	LEBANON	MO	0.10E	0.11
LCKM8	LICK CREEK	MT	0.10	0.11
LTWW4	LITTLE WARM SPGS SCS	WY	0.10	0.11
COLR250	LIVERMORE 11WSW	CO	0.10E	0.11
LOPW4	LOOMIS PARK	WY	0.10	0.11
LOT2	LOST DOG	CO	0.10	0.11
JSLN8	LUDDEN 6SW, JAMES R	ND	0.10E	0.11
LYNC2	LYNX PASS	CO	0.10	0.11
MDKN8	MADDOCK	ND	0.10E	0.11
MPLM8	MADISON PLATEAU	MT	0.10	0.11
MANM8	MANY GLACIER SNT	MT	0.10	0.11
MCCCK1	MCCRACKEN	KS	0.10	0.11
ZUBK1	MCCRACKEN	KS	0.10E	0.11
MTEW4	MEETEETSE	WY	0.10E	0.11
MLNM7	MILAN	MO	0.10E	0.11
MOLI4	MOULTON, CHARITON R	IA	0.10E	0.11
MTKM8	MOUNT LOCKHART	MT	0.10	0.11
COB057	NEDERLAND 6E	CO	0.10E	0.11
NORM8	NORTHEAST ENTRANCE	MT	0.10	0.11
NGTC2	NORTHGATE, N PLATTE	CO	0.10E	0.11

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OAKN8	OAKES	ND	0.10	0.11
PCFM7	PACIFIC	MO	0.10	0.11
PRKW4	PARKER PEAK	WY	0.10	0.11

PARS2	PARKSTON 8ENE	SD	0.10E	0.11
PRPM8	PORCUPINE	MT	0.10	0.11
PRVW4	POWDER RIVER #2	WY	0.10E	0.11
PWDW4	POWDER RIVER PASS	WY	0.10	0.11
COEL49	RAMAH 4WNW	CO	0.10E	0.11
RLVC2	ROLLINSVILLE 1NW	CO	0.10E	0.11
RUSC2	RUSH 4N	CO	0.10	0.11
SAOM8	SACO 1NNW	MT	0.10E	0.11
SDMM8	SADDLE MOUNTAIN	MT	0.10	0.11
SRSW4	SANDSTONE	WY	0.10	0.11
SCRW4	SHELL CREEK	WY	0.10	0.11
SHFM8	SHOWER FALLS	MT	0.10	0.11
SMCK1	SMITH CENTER	KS	0.10E	0.11
SFSM8	SOUTH FORK SHIELDS	MT	0.10	0.11
SPSW4	SOUTH PASS	WY	0.10	0.11
SOU	SOUTH PASS CITY 2WNW	WY	0.10E	0.11
CSPC2	SPICER	CO	0.10E	0.11
SPGN1	SPRAGUE 3W	NE	0.10E	0.11
SCHM7	ST CHARLES ELM POINT	MO	0.10	0.11
STOS2	ST ONGE 2S	SD	0.10E	0.11
STKN1	STOCKVILLE	NE	0.10	0.11
STTM8	STUART MOUNTAIN	MT	0.10	0.11
SUCW4	SUCKER CREEK	WY	0.10	0.11
TLRN8	TAYLOR 7NNW	ND	0.10E	0.11
UNNM7	UNION	MO	0.10E	0.11
VDGN1	VERDIGRE	NE	0.10E	0.11
WHTM8	WHITE MILL	MT	0.10	0.11
BFFM7	WINDYVILLE 4NW	MO	0.10	0.11
ZIRC2	ZIRKEL	CO	0.10E	0.11
SUES2	ABERDEEN 2S	SD	0.09E	0.10
ADAK1	ADA 3ESE, SALT CR	KS	0.09E	0.10
ALBM8	ALBION 1N	MT	0.09E	0.10
ALXS2	ALEXANDRIA	SD	0.09E	0.10
AVVM7	AVA 6W	MO	0.09E	0.10
BFOS2	BELLE FOURCHE 22NNW	SD	0.09E	0.10
BEFS2	BELLE FOURCHE RES	SD	0.09E	0.10
BTWM8	BELLTOWER	MT	0.09E	0.10
BLYW4	BILLY CREEK	WY	0.09E	0.10
BOSW4	BOSLER 2S, LARAMIE R	WY	0.09E	0.10
YYC	CALGARY	AB	0.09E	0.10
COYI4	CORYDON 2NE	IA	0.09E	0.10
DVL	DEVILS LAKE AIRPORT	ND	0.09E	0.10
EDMS2	EDGEMONT (AMRAD)	SD	0.09E	0.10
ELBC2	ELBERT	CO	0.09E	0.10
ELDM7	ELDON	MO	0.09E	0.10
FTAN8	FORTUNA 1W	ND	0.09E	0.10
GLSM7	GLASGOW	MO	0.09E	0.10
GLZM7	GLASGOW, MISSOURI R	MO	0.09	0.10
GCOS2	GRACE COOLIDGE CR	SD	0.09E	0.10
GREN8	GRENORA	ND	0.09E	0.10

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GYSK1	GYP SUM 4S, GYP SUM CR	KS	0.09 0.10

HALN1	HALLAM 2N	NE	0.09E	0.10
HFDN8	HANNAFORD	ND	0.09E	0.10
HTVM7	HARVESTER 2SW	MO	0.09E	0.10
JCMM7	JEFFERSON CITY	MO	0.09E	0.10
JUDN8	JUDSON 9SSE, HEART R	ND	0.09E	0.10
KSLN8	KENSAL 8NNW, JAMES R	ND	0.09E	0.10
COEL50	KIOWA 6ENE	CO	0.09E	0.10
NOBM8	KNOBS 4SW	MT	0.09E	0.10
LKVM8	LAKEVIEW	MT	0.09E	0.10
COJF179	LAKEWOOD 2S	CO	0.09E	0.10
LDOM7	LAREDO, MEDICINE CR	MO	0.09	0.10
LCRW4	LARSEN CREEK SNOTEL	WY	0.09E	0.10
LBNM7	LEBANON 2W	MO	0.09E	0.10
LSWM7	LEES SUMMIT 2WSW	MO	0.09E	0.10
LGSW4	LITTLE GOOSE SNOTEL	WY	0.09E	0.10
LOVK1	LOVEWELL DAM	KS	0.09E	0.10
LCRM7	LUCERNE, MEDICINE CR	MO	0.09E	0.10
MHLN8	MARSHALL, KNIFE R	ND	0.09E	0.10
MKLN1	MASKELL, MISSOURI R	NE	0.09E	0.10
MESM7	MCCREDIE EXP STA	MO	0.09E	0.10
MEDN1	MEAD 6S	NE	0.09E	0.10
MWTW4	MIDWEST	WY	0.09E	0.10
NOVM7	NOVINGER	MO	0.09E	0.10
NVZM7	NOVINGER, CHARITON R	MO	0.09	0.10
BCKN8	OAKES 6NNE, BEAR CR	ND	0.09E	0.10
OTTM7	OTTERVILLE, LAMINE R	MO	0.09	0.10
PACM7	PACIFIC 1NNW	MO	0.09E	0.10
COEL27	PARKER 10ESE	CO	0.09E	0.10
PETN1	PETERSBURG	NE	0.09E	0.10
PLNK1	PLAINVILLE 4WNW	KS	0.09	0.10
PRSW4	POWDER RIVER SCHOOL	WY	0.09E	0.10
RAYM7	RAYTOWN	MO	0.09E	0.10
REES2	REE HEIGHTS	SD	0.09E	0.10
SAWW4	SAWMILL PARK RAWS	WY	0.09	0.10
HKMN1	STAGECOACH LAKE	NE	0.09E	0.10
SBTC2	STEAMBOAT SPRINGS	CO	0.09	0.10
SULM8	SULA 3ENE	MT	0.09E	0.10
THNC2	THORNTON 5NNE	CO	0.09E	0.10
TTNM7	TRENTON	MO	0.09E	0.10
UNVM7	UNIONVILLE	MO	0.09E	0.10
UIHM7	URICH 2SW	MO	0.09E	0.10
HRSS2	VALE 3NE, HORSE CR	SD	0.09E	0.10
VTLS2	VETAL, LTL WHITE R	SD	0.09E	0.10
WAAK1	WAKEENEY, SALINE R	KS	0.09E	0.10
WHGM7	WASHINGTON, MISSOURI	MO	0.09	0.10
WEPN1	WEeping WATER	NE	0.09E	0.10
WISN8	WISHEK 6W	ND	0.09	0.10
ALRI4	ALLERTON	IA	0.08E	0.09
AIA	ALLIANCE	NE	0.08	0.09
ALZM8	ALZADA 1SSE	MT	0.08E	0.09
BAGW4	BAGGS	WY	0.08E	0.09
COWW4	BAGGS 21NNE	WY	0.08E	0.09

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SNDW4	BEULAH 2S, SAND CR	WY	0.08E	0.09
BHKC2	BLACK HAWK 6SE	CO	0.08E	0.09
BACM7	BLACKWATER (DNR)	MO	0.08E	0.09
BLFC2	BOULDER 7SW	CO	0.08E	0.09
BDBM8	BRANDENBERG	MT	0.08E	0.09
SFAK1	CO-KS STATE LINE	KS	0.08E	0.09
UMCM7	COLUMBIA	MO	0.08E	0.09
MOBN11	COLUMBIA 1SSE	MO	0.08E	0.09
COXM7	COLUMBIA HINKSON CR	MO	0.08E	0.09
CONC2	CONIFER	CO	0.08E	0.09
CRWN1	CRAWFORD	NE	0.08E	0.09
DERI4	DERBY	IA	0.08E	0.09
RASW4	DUBOIS 22SW	WY	0.08E	0.09
ETHS2	ETHAN	SD	0.08E	0.09
EVGC2	EVERGREEN	CO	0.08	0.09
EWSN1	EWING, S ELKHORN	NE	0.08E	0.09
FAIMB	FAIMON, ADRIAN	MO	0.08E	0.09
RSNW4	FALES ROCK RAWS	WY	0.08E	0.09
FWMW8	FORKS 4NNE	MT	0.08E	0.09
FSYM8	FORSYTH	MT	0.08E	0.09
CODG30	FRANKTOWN 4NE	CO	0.08E	0.09
GIBM8	GIBBONS PASS	MT	0.08E	0.09
GRCM7	GREEN CITY 5N	MO	0.08E	0.09
GUIN1	GUIDE ROCK, REPUB R	NE	0.08E	0.09
HERS2	HERMOSA, BATTLE CR	SD	0.08	0.09
HLRC2	HIGHLANDS RANCH	CO	0.08E	0.09
CODG121	HIGHLANDS RANCH 3SSE	CO	0.08E	0.09
INSM8	HINSDALE 2E	MT	0.08E	0.09
HLVI4	HOLLY SPRINGS 1NW	IA	0.08E	0.09
HUSK1	HUSCHER	KS	0.08E	0.09
IPIN1	IMPERIAL 13N	NE	0.08E	0.09
KNEN8	KEENE 3S	ND	0.08E	0.09
MOFSA041	KEYTESVILLE	MO	0.08E	0.09
IDOC2	LAWSON, CLEAR CREEK	CO	0.08E	0.09
LEAK1	LEAWOOD	KS	0.08E	0.09
LCMM8	LEWISTOWN	MT	0.08E	0.09
LEWM8	LEWISTOWN 2SW	MT	0.08E	0.09
LWT	LEWISTOWN AIRPORT	MT	0.08	0.09
LNJN1	LINCOLN FIRE STA 12	NE	0.08E	0.09
LVAM7	LIVONIA	MO	0.08E	0.09
LVZM7	LIVONIA, CHARITON R	MO	0.08	0.09
MBRM8	MAIN BOULDER RAWS	MT	0.08E	0.09
MRFM7	MARSHFIELD	MO	0.08	0.09
MSSM7	MUSSEL FORK	MO	0.08	0.09
COCF10	NATHROP 5SSW	CO	0.08E	0.09
NCMK1	NEW CAMBRIA 1SE	KS	0.08E	0.09
NWLS2	NEWELL	SD	0.08	0.09
PRTM7	PRINCETON	MO	0.08E	0.09
RAUN8	RAUB 5NNE	ND	0.08E	0.09
RAYM8	RAYMOND BORDER STA	MT	0.08E	0.09
RICN8	RICHARDTON, HEART R	ND	0.08E	0.09
WRPM8	ROGERS PASS 9NNE	MT	0.08E	0.09
SLNK1	SALINA, MULBERRY CR	KS	0.08	0.09

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STKM7	STOCKTON 9NE	MO	0.08E	0.09
WAMW4	WAMSUTTER	WY	0.08E	0.09
WTDN8	WATFORD CITY	ND	0.08	0.09
FSTM7	WENTZVILLE 3NW	MO	0.08E	0.09
WHKN8	WISHEK	ND	0.08E	0.09
ASIC2	ASPEN SPRINGS	CO	0.07E	0.08
MGLM8	BABB 10SW	MT	0.07E	0.08
BALC2	BAILEY 5N	CO	0.07E	0.08
GSRC2	BOULDER 7SW	CO	0.07E	0.08
BRTS2	BRITTON 9NW	SD	0.07E	0.08
BULS2	BUFFALO 14SSW AMRAD	SD	0.07E	0.08
BUBC2	BUFFALO CREEK	CO	0.07E	0.08
BRRW4	BURRIS	WY	0.07E	0.08
BSSN1	BUSHNELL 15S	NE	0.07	0.08
BYNM7	BYNUMVILLE 1E	MO	0.07E	0.08
CLTN1	CARLETON 3SW	NE	0.07E	0.08
CSMM8	CASCADE 5S	MT	0.07E	0.08
OACK1	CEDAR BLUFF DAM	KS	0.07E	0.08
CCYC2	CENTRAL CITY	CO	0.07E	0.08
CINW4	CINNABAR PARK	WY	0.07E	0.08
OBAW4	CODY 12SE	WY	0.07E	0.08
CCAM7	COLE CAMP 3WNW	MO	0.07E	0.08
COUW4	COULTER CREEK	WY	0.07E	0.08
CSPS2	CUSTER 12ESE RAWS	SD	0.07E	0.08
DRBM8	DARBY	MT	0.07E	0.08
DWIN1	DE WITT	NE	0.07E	0.08
DERM8	DEER LODGE 3W	MT	0.07E	0.08
DIIC2	DILLON RESERVOIR	CO	0.07E	0.08
EDRM7	ELDRIDGE 7W	MO	0.07E	0.08
ELRN1	ELLSWORTH 24NNE	NE	0.07E	0.08
FSDN8	FESSENDEN	ND	0.07E	0.08
FRON1	FORT ROBINSON	NE	0.07E	0.08
FTNM7	FULTON	MO	0.07E	0.08
GPKM8	GATE PARK RAWS	MT	0.07E	0.08
GREC2	GREENLAND 6NE	CO	0.07E	0.08
HVSM7	HARVESTER	MO	0.07E	0.08
HLTM8	HOLTER DAM 3ESE	MT	0.07E	0.08
COCC14	IDAHO SPRINGS 2WSW	CO	0.07E	0.08
JMSK1	JAMESTOWN, BUFFALO C	KS	0.07E	0.08
JWPM7	JEFF CITY W P	MO	0.07E	0.08
JFFM7	JEFFERSON CITY	MO	0.07E	0.08
JEF	JEFFERSON CITY	MO	0.07	0.08
KNDW4	KENDALL	WY	0.07E	0.08
LANW4	LANDER, POPO AGIE R	WY	0.07E	0.08
LEOW4	LEO 6SW	WY	0.07E	0.08
GARD009	LEWELLEN 2E	NE	0.07E	0.08
LWMM8	LEWISTOWN 11ESE	MT	0.07E	0.08
SNOM8	LEWISTOWN 20SW	MT	0.07E	0.08
LCLM7	LINCOLN	MO	0.07E	0.08
LNCM8	LINCOLN 2NE RAWS	MT	0.07E	0.08
LINM8	LINCOLN RANGER STA	MT	0.07E	0.08
LBCM8	LITTLE BULLWHACKER C	MT	0.07	0.08
MNPK1	MINNEAPOLIS	KS	0.07	0.08

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MPSK1	MINNEAPOLIS, SOLOMON	KS	0.07E	0.08
NELN1	NELSON	NE	0.07E	0.08
OКСN1	OSHKOSH 10NE	NE	0.07E	0.08
OVNM8	OVANDO DCP	MT	0.07E	0.08
PAKC2	PARKER 3NE	CO	0.07E	0.08
PVRN1	PLAINSVIEW RANCH	NE	0.07E	0.08
PRIM7	PRAIRIE HILL 2WNW	MO	0.07	0.08
RLSC2	RALSTON RESERVOIR	CO	0.07E	0.08
GDNC2	RALSTON RESERVOIR	CO	0.07	0.08
MODT1	SALEM 2NW	MO	0.07E	0.08
SBYM7	SALISBURY	MO	0.07E	0.08
SPKW4	SCHOOLHOUSE PARK	WY	0.07	0.08
SHBW4	SHERIDAN, GOOSE CR	WY	0.07	0.08
SHKN1	SHICKLEY 4S	NE	0.07E	0.08
SBLW4	SODA BUTTE CREEK	WY	0.07E	0.08
SPAW4	SOUTH PASS CITY	WY	0.07E	0.08
SPKM7	SPICKARD 7W	MO	0.07	0.08
SPRN1	SPRAGUE	NE	0.07E	0.08
BWSW4	STATE LINE WY-SD	WY	0.07E	0.08
TEDC2	TEDS PLACE	CO	0.07E	0.08
TNSW4	TEN SLEEP 16SSE	WY	0.07E	0.08
VERS2	VERMILLION 3N	SD	0.07E	0.08
VERM7	VERSAILLES 2W	MO	0.07E	0.08
WAPW4	WAPITI 1NE	WY	0.07E	0.08
WACN8	WATFORD CITY 12E	ND	0.07E	0.08
WBR52	WEBSTER	SD	0.07E	0.08
SVWM8	WILSALL 4NNE	MT	0.07E	0.08
WILM8	WILSALL 8ENE	MT	0.07E	0.08
OLF	WOLF POINT	MT	0.07	0.08
WOWC2	WOODROW 6NNE	CO	0.07	0.08
WDRC2	WOODROW 6NNE AMRAD	CO	0.07E	0.08
GCAW4	ACME, GOOSE CREEK	WY	0.06E	0.06
ALIN1	ALLIANCE 1WNW	NE	0.06E	0.06
AMIN8	AMIDON	ND	0.06E	0.06
ASBN1	ASHBY 20SSW	NE	0.06E	0.06
BLFS2	BELLE FOURCHE 9W	SD	0.06E	0.06
COLR252	BELLVUE 1NW	CO	0.06E	0.06
BKFC2	BLACK FOREST	CO	0.06E	0.06
BNLM7	BOONVILLE 4SW	MO	0.06	0.06
SYBW4	BOSLER 21NE	WY	0.06E	0.06
BYDW4	BOYD RIDGE RAW5	WY	0.06E	0.06
BRMK1	BREMEN 1E	KS	0.06	0.06
BNFM8	BRENNER GDDS	MT	0.06E	0.06
BKMC2	BUCKHORN MOUNTAIN 1E	CO	0.06E	0.06
ATRS2	BUFFALO 14SE	SD	0.06E	0.06
FLDW4	BUFFALO 15W	WY	0.06E	0.06
BWXW4	BUFFALO BILL RES	WY	0.06E	0.06
CAPM7	CAPLINGER MILLS 4NW	MO	0.06E	0.06
CODG25	CASTLE PINES 2NNE	CO	0.06E	0.06
ELSK1	CEDAR BLUFF DAM 4NNE	KS	0.06E	0.06
CDJ	CHILLICOTHE	MO	0.06	0.06

CFHM7 CLIFTON HILL MO 0.06E 0.06
 COS COLORADO SPRINGS CO 0.06 0.06

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CNEC2	COLORADO SPRINGS 4NE	CO	0.06E	0.06
MOBN19	COLUMBIA 4WSW	MO	0.06E	0.06
CKCM8	COOKE CITY 2W	MT	0.06E	0.06
CEKC2	CORRAL CREEK	CO	0.06	0.06
CDHS2	COTTONWOOD DAM	SD	0.06E	0.06
COUN8	COURTENAY 1NW	ND	0.06E	0.06
DRFS2	DEERFIELD RESERVOIR	SD	0.06E	0.06
COSU7	DILLON 1WNW	CO	0.06E	0.06
EDMN8	EDMUNDS ARROWWOOD	ND	0.06E	0.06
ERFM8	ERVIN RIDGE GDDS	MT	0.06E	0.06
FCS	FORT CARSON	CO	0.06E	0.06
FRDM8	FRENCHMAN DAM	MT	0.06E	0.06
GCK	GARDEN CITY	KS	0.06	0.06
GRRC2	GROSS RESERVOIR	CO	0.06	0.06
GSSC2	GROSS RESERVOIR	CO	0.06E	0.06
NUCK014	GUIDE ROCK 8ESE	NE	0.06E	0.06
GLFM8	GULF RAWS	MT	0.06E	0.06
HARK1	HARLAN	KS	0.06E	0.06
HMG1	HEMINGFORD 10SW	NE	0.06E	0.06
OSAS2	HERMOSA, BATTLE CR	SD	0.06	0.06
HCKN1	HICKMAN WAGONTRAIN L	NE	0.06E	0.06
HRLC2	HOURLASS RES SNOTEL	CO	0.06E	0.06
HOUC2	HOURLASS RESERVOIR	CO	0.06E	0.06
INBS2	INDIAN BUTTE RAWS	SD	0.06E	0.06
3JC	JUNCTION CITY	KS	0.06E	0.06
FRBS2	KEYSTONE 18SE	SD	0.06E	0.06
LAEM7	LAURIE 5NE	MO	0.06E	0.06
ICLK1	LEAWOOD, INDIAN CR	KS	0.06E	0.06
LEIW4	LEIGH CREEK RAWS	WY	0.06E	0.06
STLC2	LEROY 9WSW	CO	0.06E	0.06
LWSM8	LEWISTOWN 10S	MT	0.06E	0.06
LNLN1	LINCOLN FIRE STA 13	NE	0.06E	0.06
S69	LINCOLN RANGER STA	MT	0.06E	0.06
EHNC2	LIVERMORE, POUDRE R	CO	0.06E	0.06
LIVC2	LIVERMORE, POUDRE R	CO	0.06E	0.06
ZUGK1	MCCRACKEN	KS	0.06E	0.06
MDDM7	MIDDLETOWN	MO	0.06E	0.06
MITN1	MITCHELL 5E	NE	0.06E	0.06
UFMN1	MITCHELL 6NE	NE	0.06	0.06
NMRC2	NEW RAYMER 21N	CO	0.06E	0.06
NION1	NIOBRARA	NE	0.06E	0.06
OHAN1	OMAHA, BIG PAPILLION	NE	0.06E	0.06
CODG42	PARKER 3NE	CO	0.06E	0.06
PCRW4	POKER CREEK RAWS	WY	0.06	0.06
REFC2	RED FEATHER LAKES	CO	0.06E	0.06
RRDM8	RED ROCK RAWS	MT	0.06E	0.06
RDWS2	REDWATER CREEK	SD	0.06	0.06
RDTN8	RICHARDTON ABBEY	ND	0.06E	0.06
RLYS2	ROSLYN	SD	0.06E	0.06

WYSH1	SHERIDAN 1N	WY	0.06E	0.06
WYSH14	SHERIDAN 2NW	WY	0.06E	0.06
SFSW4	SHERIDAN 7NW	WY	0.06E	0.06
SBYM8	SODA BUTTE RAW	MT	0.06	0.06

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SFKW4	SOUTH FORK	WY	0.06E	0.06
SCLM7	ST CHARLES 1E	MO	0.06E	0.06
STKK1	STOCKTON 1E	KS	0.06E	0.06
SUNW4	SUNSHINE 3NE	WY	0.06E	0.06
TEPM8	TEPEE POINT RAW	MT	0.06E	0.06
TFW4	TOWER FALLS STATION	WY	0.06E	0.06
TTLN8	TUTTLE	ND	0.06E	0.06
PTNW4	UPTON 14ENE	WY	0.06E	0.06
VNDM8	VANANDA 6NE	MT	0.06E	0.06
OADK1	WAKEENEY	KS	0.06E	0.06
QAAK1	WAKEENEY 22SSE	KS	0.06E	0.06
WKAS2	WAKONDA, VERMILLION	SD	0.06E	0.06
SMCW4	WHEATLAND 20SW	WY	0.06E	0.06
WTRM8	WHITEWATER	MT	0.06E	0.06
WCRM8	WICKED CREEK RAW	MT	0.06E	0.06
WODC2	WOODLAND PARK 8NNW	CO	0.06E	0.06
ALAN1	ALLIANCE 1WNW	NE	0.05E	0.05
ANDS2	ANDOVER	SD	0.05E	0.05
BUOS2	ANTELOPE RANGER STA	SD	0.05E	0.05
ARWN8	ARROWWOOD LAKE	ND	0.05E	0.05
AUXM7	AUXVASSE	MO	0.05E	0.05
HGRC2	BAILEY 7NW	CO	0.05E	0.05
BLZC2	BALZAC	CO	0.05E	0.05
BATS2	BATTLE MTN NFS	SD	0.05E	0.05
BGDW4	BIG GOOSE CREEK ABV	WY	0.05E	0.05
BGSN1	BIG SPRINGS	NE	0.05E	0.05
BOVM7	BOONVILLE 3SW	MO	0.05E	0.05
BNGN1	BRUNING	NE	0.05	0.05
BUWW4	BUFORD 6W	WY	0.05E	0.05
BUJW4	BURGESS RAW	WY	0.05	0.05
CASM8	CASCADE	MT	0.05E	0.05
CSEM8	CASCADE 20SSE	MT	0.05E	0.05
CNTI4	CENTERVILLE	IA	0.05	0.05
CENS2	CENTERVILLE 6SE	SD	0.05E	0.05
CTAM7	CENTRALIA	MO	0.05	0.05
CLOI4	CLIO 4NW	IA	0.05E	0.05
CCCC2	COAL CREEK CANYON	CO	0.05E	0.05
CBKS2	COLD BROOK DAM	SD	0.05E	0.05
CMMC2	COMMERCE CITY 2NE	CO	0.05E	0.05
WBRM8	CORVALLIS 2NE	MT	0.05E	0.05
DRDM7	DARDENNE PRAIRIE	MO	0.05E	0.05
DTON1	DENTON 2N	NE	0.05E	0.05
DLLC2	DILLON 1E	CO	0.05	0.05
SUMM8	EAST GLACIER 11SW	MT	0.05E	0.05
RDCS2	EDGEMONT 7NE	SD	0.05E	0.05
EDGS2	EDGEMONT, CHEYENNE R	SD	0.05E	0.05
ELSN1	ELLSWORTH 15NNE	NE	0.05E	0.05

ENWC2	ENGLEWOOD, SO PLATTE	CO	0.05E	0.05
COLR230	ESTES PARK 2SSW	CO	0.05E	0.05
COCC1	EVERGREEN 7WSW	CO	0.05E	0.05
MOTX9	FT LEONARD WOOD 10S	MO	0.05E	0.05
MOFSA027	FULTON 3SW	MO	0.05E	0.05
GRSM7	GRAVOIS MILLS	MO	0.05E	0.05

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STATION				PERIOD
ID	DESCRIPTION	STATE	06/21	SUM
HRBM8	HARB	MT	0.05E	0.05
ZIMN1	HARRISON 9NE	NE	0.05E	0.05
MIMN1	HARRISON 9NE	NE	0.05E	0.05
ZEDK1	HAYS 15NNE	KS	0.05E	0.05
HGRM8	HILGER	MT	0.05E	0.05
HOLC2	HOLYOKE 3SSW	CO	0.05	0.05
HOSS2	HOT SPRINGS	SD	0.05E	0.05
HOHS2	HOT SPRINGS (AMRAD)	SD	0.05E	0.05
HOTS2	HOT SPRINGS, FALL R	SD	0.05	0.05
HHRW4	HYATTVILLE 6NE	WY	0.05E	0.05
JWLK1	JEWELL	KS	0.05E	0.05
JDHM8	JUDITH GAP 13E	MT	0.05E	0.05
PKRW4	KAYCEE 20W	WY	0.05E	0.05
KBLN1	KIMBALL 14SSW	NE	0.05E	0.05
KMBN1	KIMBALL 2NE	NE	0.05	0.05
VCWK1	LACLEDE, VERMILLION	KS	0.05E	0.05
LNGS2	LANGFORD	SD	0.05E	0.05
OAEW4	LARAMIE 22SW	WY	0.05E	0.05
LENI4	LEON 6ESE	IA	0.05	0.05
LEWN1	LEWELLEN, NO PLATTE	NE	0.05E	0.05
LNSK1	LINDSBORG, SMOKY HILL	KS	0.05E	0.05
LVGM8	LIVINGSTON 12S	MT	0.05E	0.05
COB084	LONGMONT 3NW	CO	0.05	0.05
ZUJK1	MCCRACKEN	KS	0.05E	0.05
MCPK1	MCPHERSON	KS	0.05E	0.05
MTRK1	MENTOR, SMOKY HILL R	KS	0.05E	0.05
MCLS2	MITCHELL	SD	0.05E	0.05
MIT52	MITCHELL 2N	SD	0.05E	0.05
MONC2	MONUMENT	CO	0.05E	0.05
MGHW4	MOSIER GULCH	WY	0.05	0.05
MDGW4	MUDDY GAP	WY	0.05E	0.05
NRMC2	NEW RAYMER 21N	CO	0.05E	0.05
TCKW4	NORRIS JUNCTION 1NW	WY	0.05E	0.05
PLMC2	PALMER LAKE	CO	0.05E	0.05
PKLC2	PICKLE GULCH RAW5	CO	0.05E	0.05
ZPC	PINCHER CR	AB	0.05E	0.05
PKCW4	POCKET CREEK SNOTEL	WY	0.05E	0.05
PRWC2	PREWITT RESERVOIR	CO	0.05E	0.05
UIN	QUINCY	IL	0.05	0.05
COJF140	RALSTON BUTTES 1NNW	CO	0.05E	0.05
RCH	RED CANYON	WY	0.05E	0.05
REGN8	REGENT, CANNONBALL R	ND	0.05E	0.05
RGUS2	RENO GULCH	SD	0.05E	0.05
SPLC2	ROCKY MOUNTN ARSENAL	CO	0.05E	0.05
BFF	SCOTTSBLUFF	NE	0.05	0.05

SCBN1	SCOTTSBLUFF 1E	NE	0.05	0.05
SCFN1	SCOTTSBLUFF 2NNE	NE	0.05E	0.05
BGCW4	SHERIDAN 6WSW	WY	0.05	0.05
SLGW4	SHERIDAN, GOOSE CR	WY	0.05E	0.05
SBCM8	SILVER GATE 2WSW	MT	0.05	0.05
SLKM7	SMITHVILLE DAM	MO	0.05E	0.05
TESK1	TESCOTT	KS	0.05E	0.05
TSCK1	TESCOTT, SALINE R	KS	0.05E	0.05

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TOKK1	TOPEKA WATERWORKS	KS	0.05E	0.05
TWRW4	TOWER FALLS	WY	0.05E	0.05
VEDN1	VERDIGRE, VERDIGRE CR	NE	0.05E	0.05
WFCN8	WATFORD CITY	ND	0.05	0.05
WCYN8	WATFORD CITY 1S	ND	0.05E	0.05
WEBM8	WEBSTER 3E	MT	0.05E	0.05
WDSM7	WELDON SPRINGS 1N	MO	0.05E	0.05
WIDM7	WILDWOOD	MO	0.05E	0.05
WLFM8	WOLF POINT	MT	0.05E	0.05
WODN1	WOOD RIVER 1NNW	NE	0.05E	0.05
MOBN25	WOOLDRIDGE 3ENE	MO	0.05E	0.05
AGAN1	AGATE 3E	NE	0.04E	0.04
AGTN1	AGATE 3ENE RAWS	NE	0.04E	0.04
DDNW4	ALADDIN 6NW	WY	0.04E	0.04
ATNK1	ALTON 2SW	KS	0.04	0.04
ANTN1	ANTIOCH	NE	0.04E	0.04
ATLM7	ATLANTA	MO	0.04E	0.04
ATAM7	ATLANTA RAWS	MO	0.04E	0.04
MFBW4	BARNUM, POWDER R	WY	0.04	0.04
BLUM8	BLUFF CREEK RAWS	MT	0.04	0.04
LMBW4	BOLES SPRING	WY	0.04E	0.04
BOOM7	BOONVILLE	MO	0.04E	0.04
BNVM7	BOONVILLE 1W	MO	0.04E	0.04
BOZM7	BOONVILLE, MISSOURI R	MO	0.04E	0.04
BWNN8	BOWMAN HALEY RES	ND	0.04E	0.04
COCF25	BUENA VISTA 4WNW	CO	0.04E	0.04
2WX	BUFFALO	SD	0.04	0.04
BUFS2	BUFFALO	SD	0.04E	0.04
BFFS2	BUFFALO	SD	0.04E	0.04
BFFW4	BUFFALO 5WSW	WY	0.04E	0.04
BLBW4	BUFFALO BILL DAM	WY	0.04E	0.04
BURW4	BURGESS JUNCTION	WY	0.04	0.04
CRON1	CAIRO 5S	NE	0.04E	0.04
CAIN1	CAIRO 5S	NE	0.04E	0.04
CODG126	CASTLE ROCK	CO	0.04E	0.04
CHTI4	CHARITON 5SSE	IA	0.04E	0.04
SFJM8	CHECKERBOARD 12NE	MT	0.04	0.04
WYLM22	CHEYENNE 5NE	WY	0.04	0.04
GRAW4	CHEYENNE 7NE	WY	0.04E	0.04
CHKM8	CHINOOK 35SE	MT	0.04E	0.04
CLRN1	CLEARWATER, CLRWTR	NE	0.04E	0.04
COD	CODY	WY	0.04	0.04
VALW4	CODY 34SW	WY	0.04E	0.04

ODIW4	CODY RADIO	WY	0.04E	0.04
CCMM7	COLE CAMP 3NW	MO	0.04E	0.04
CSIC2	COLORADO SIERRA	CO	0.04E	0.04
COTM7	COTTLEVILLE	MO	0.04E	0.04
DAZM8	DAISY PEAK	MT	0.04E	0.04
DECM8	DECKER	MT	0.04E	0.04
DSLM8	DECKER 2SE	MT	0.04E	0.04
DFDS2	DEERFIELD 3SE	SD	0.04E	0.04
ZEHK1	ELLIS 8S	KS	0.04E	0.04
EUSN1	EUSTIS 2NW	NE	0.04	0.04

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BHCM7	EXCELLO 3WSW	MO	0.04E	0.04
FLTC2	FLATIRON RESERVOIR	CO	0.04	0.04
FTRK1	FT RILEY, KANSAS R	KS	0.04E	0.04
FULS2	FULTON, ROCK CR	SD	0.04E	0.04
GSNN8	GARRISON	ND	0.04E	0.04
N60	GARRISON 1W	ND	0.04	0.04
GERN1	GERING 1NW	NE	0.04E	0.04
COJF267	GOLDEN 9WNW	CO	0.04E	0.04
GDVN8	GOLDEN VALLEY 10S	ND	0.04E	0.04
GVRC2	GROVER	CO	0.04E	0.04
HANW4	HANNA, MEDICINE BOW	WY	0.04	0.04
HARN1	HARDY	NE	0.04E	0.04
HDYN1	HARDY, REPUBLICAN R	NE	0.04E	0.04
ANSM7	HERITAGE LANDING	MO	0.04E	0.04
HICN1	HICKMAN	NE	0.04E	0.04
HGHM7	HIGH POINT	MO	0.04E	0.04
IRVN1	IRVINGTON	NE	0.04E	0.04
JNSC2	JONES HILL RAWS	CO	0.04	0.04
GAPM8	JUDITH GAP	MT	0.04E	0.04
KCSM7	KANSAS CITY SOUTH	MO	0.04E	0.04
KFFC2	KAUFFMAN 4SSE	CO	0.04E	0.04
SPWW4	KEARNY 12WSW	WY	0.04	0.04
LKSM7	LAKESIDE	MO	0.04E	0.04
LMRW4	LAMAR RANGER STATION	WY	0.04E	0.04
LKSC2	LARKSPUR 4NW	CO	0.04E	0.04
0429N8	LEHR 4S	ND	0.04E	0.04
LNPM8	LENNEP 5SW	MT	0.04E	0.04
LIK7	LICKING 7W	MO	0.04E	0.04
CEFM8	LIMA 36ENE	MT	0.04E	0.04
LSBK1	LINDSBORG	KS	0.04E	0.04
LBHM8	LITTLE BIG HORN RAWS	MT	0.04E	0.04
LGNC2	LONGMONT 2W	CO	0.04E	0.04
LUDS2	LUDLOW 3SSE	SD	0.04E	0.04
MANK1	MANKATO	KS	0.04E	0.04
MTAC2	MATACAT	CO	0.04E	0.04
PCMW4	MAYOWORTH, POWDER R	WY	0.04	0.04
MERC2	MERINO 7WNW	CO	0.04E	0.04
MEXM7	MEXICO	MO	0.04E	0.04
MILM8	MILES CITY 1NW	MT	0.04E	0.04
MLS	MILES CITY AIRPORT	MT	0.04	0.04
MICM8	MILES CITY, TONGUE R	MT	0.04E	0.04

MNON8	MINOT EXP STATION	ND	0.04	0.04
MSAM8	MISSOULA 2NE	MT	0.04E	0.04
MICN1	MITCHELL, N PLATTE R	NE	0.04E	0.04
NCVN1	NEBRASKA CITY #2	NE	0.04E	0.04
NWFM7	NEW FRANKLIN 1W	MO	0.04	0.04
OLNM7	OFALLON 2S	MO	0.04E	0.04
OFLM7	OFALLON 2SSW	MO	0.04	0.04
OMCN1	OMAHA 6NW	NE	0.04E	0.04
ORHM8	OPHEIM 21NW, ROCK CR	MT	0.04E	0.04
PRCM7	PIERCE CITY	MO	0.04E	0.04
PINC2	PINE	CO	0.04E	0.04
PBTW4	PINE BLUFFS #2	WY	0.04E	0.04

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ECRN1	PINE BLUFFS 8SE RAW	NE	0.04E	0.04
PTIK1	PORTIS, NF SOLOMON R	KS	0.04E	0.04
PTRN8	PRETTY ROCK	ND	0.04E	0.04
RATM7	RAYTOWN #2	MO	0.04E	0.04
REDS2	REDIG 11NE	SD	0.04E	0.04
RLLC2	ROLLINSVILLE GDDS	CO	0.04E	0.04
DERN1	SCOTTSBLUFF 2WNW	NE	0.04E	0.04
SBFN1	SCOTTSBLUFF 3SW	NE	0.04	0.04
SLDW4	SOLDIER PARK SNOTEL	WY	0.04E	0.04
STCM7	ST CHARLES 7SSW	MO	0.04E	0.04
SUS	ST LOUIS (SPIRIT AP)	MO	0.04	0.04
SJOM7	ST LOUIS WSFO	MO	0.04E	0.04
WYWH1	TEN SLEEP 5NNW	WY	0.04E	0.04
TOPK1	TOPEKA, SOLDIER CR	KS	0.04E	0.04
VERN8	VERONA	ND	0.04E	0.04
BLCW4	WASHAKIE 19NW	WY	0.04E	0.04
LSX	WELDON SPRINGS	MO	0.04	0.04
WTMC2	WESTMINSTER	CO	0.04E	0.04
SQFM8	WISDOM 12NNE	MT	0.04E	0.04
WRSM8	WISE RIVER RAW	MT	0.04E	0.04
WOPW4	WOODS, PIONEER CANAL	WY	0.04	0.04
BHMM8	WYOLA 25WSW	MT	0.04	0.04
ATAW4	ALTA	WY	0.03E	0.04
AMDN8	AMIDON 12NW	ND	0.03E	0.04
ANRC2	ANTERO RESERVOIR	CO	0.03E	0.04
ANTC2	ANTERO RESERVOIR	CO	0.03E	0.04
AHRW4	ARCHER	WY	0.03E	0.04
ASHI1	ASHTON	ID	0.03E	0.04
ATWC2	ATWOOD, SO PLATTE R	CO	0.03	0.04
KSMC2	BELOIT 8ESE	KS	0.03E	0.04
BGSW4	BIG SANDY OPENING	WY	0.03E	0.04
COB049	BOULDER 3SSE	CO	0.03E	0.04
BTAC2	BOULDER 3W	CO	0.03	0.04
LLHC2	BOULDER 6NW	CO	0.03E	0.04
BZEM8	BOZEMAN STATE UNIV	MT	0.03E	0.04
CARW4	CARPENTER 3N	WY	0.03E	0.04
CTCS2	CASTLE CREEK ABV RES	SD	0.03	0.04
CTLS2	CASTLEROCK 4NW	SD	0.03E	0.04
CHRI4	CHARITON 1E	IA	0.03	0.04

CODW4	CODY	WY	0.03E	0.04
COOW4	CODY 5SE	WY	0.03E	0.04
CSBN8	CROSBY 30W RAWS	ND	0.03E	0.04
BKFS2	CUSTER 10NW	SD	0.03E	0.04
WYSH12	DAYTON 12WNW	WY	0.03	0.04
DGW	DOUGLAS	WY	0.03	0.04
4DG	DOUGLAS	WY	0.03E	0.04
DGSW4	DOUGLAS	WY	0.03E	0.04
DPWW4	DOUGLAS 1SSW	WY	0.03E	0.04
WYFM4	DUBOIS 10WNW	WY	0.03E	0.04
DBOW4	DUBOIS, WIND R	WY	0.03E	0.04
ZEKK1	ELLIS 7NE	KS	0.03E	0.04
ELWN1	ELWOOD 8S	NE	0.03	0.04
ESBK1	ESBON 7N	KS	0.03E	0.04

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COCC10	EVERGREEN 6NW	CO	0.03E	0.04
FAYM7	FAYETTE 7ESE	MO	0.03E	0.04
FYTM7	FAYETTE, MONITEAU CR	MO	0.03	0.04
FRKC2	FRANKTOWN, CHERRY CR	CO	0.03E	0.04
FTRN8	FT RANSOM 4NNE	ND	0.03E	0.04
GTNM8	GALLATIN GATEWAY	MT	0.03E	0.04
GSHW4	GAS HILLS 4E	WY	0.03E	0.04
GLCK1	GLASCO	KS	0.03E	0.04
GLAK1	GLASCO, SOLOMON R	KS	0.03E	0.04
GLDW4	GLENDO RESERVOIR	WY	0.03E	0.04
GRNM8	GRANT 5SE	MT	0.03E	0.04
0182N8	GUELPH 1NW	ND	0.03E	0.04
GUFC2	GUFFEY 10SE	CO	0.03E	0.04
JPSN1	HARRISON 4NW	NE	0.03E	0.04
HMTW4	HEART MOUNTAIN	WY	0.03E	0.04
HGBM7	HIGBEE 4S	MO	0.03E	0.04
MDCS2	HILL CITY 8SW	SD	0.03E	0.04
TDFS2	HILL CITY, SPRING CR	SD	0.03	0.04
HNZM7	HUNTSVILLE, CHARITON	MO	0.03E	0.04
COCC16	IDAHO SPRINGS	CO	0.03E	0.04
INMK1	INMAN	KS	0.03E	0.04
IRHW4	IRISH ROCK	WY	0.03E	0.04
ICAM7	K C (OP ALERT #1800)	MO	0.03E	0.04
KNYM7	KANSAS CITY 71 HWY	MO	0.03E	0.04
KTHN8	KATHRYN	ND	0.03E	0.04
FORN1	KIMBALL 15NE RAWS	NE	0.03E	0.04
MTNW4	KINNEAR 9WNW	WY	0.03E	0.04
LSTM7	LAKE ST LOUIS	MO	0.03E	0.04
FMDM7	LAKE ST LOUIS 2SW	MO	0.03E	0.04
LDRI1	LEADORE	ID	0.03E	0.04
LNBM8	LINDBERGH LAKE	MT	0.03E	0.04
BVRN8	LINTON, BEAVER CR	ND	0.03E	0.04
LSNM8	LITTLE SNOWY RAWS	MT	0.03E	0.04
LBRM7	LONG BRANCH RES	MO	0.03	0.04
LONC2	LONGMONT 2ESE	CO	0.03E	0.04
COB0143	LONGMONT 2N	CO	0.03	0.04
LVRC2	LOUVIERS	CO	0.03E	0.04

MOME1	MADISON	MO	0.03E	0.04
MAZM7	MADISON	MO	0.03E	0.04
MADM7	MADISON	MO	0.03E	0.04
MRMM8	MARTINSDALE 2E	MT	0.03E	0.04
MRTM8	MARTINSDALE 3NNW	MT	0.03E	0.04
MAXN8	MAX	ND	0.03E	0.04
MCBM7	MCBAINE, MISSOURI R	MO	0.03E	0.04
MVEM8	MELVILLE 4W	MT	0.03E	0.04
MNTN1	MINATARE, NO PLATTE	NE	0.03E	0.04
SCOT022	MITCHELL 2WNW	NE	0.03E	0.04
MOCM8	MOCCASIN 2W	MT	0.03E	0.04
MCWM8	MOCCASIN 2W AGRIMET	MT	0.03E	0.04
MOOW4	MOOSE	WY	0.03E	0.04
MTHM7	MT HULDA	MO	0.03E	0.04
CAMW4	MUDDY GAP 7SSW	WY	0.03E	0.04
MYSM8	MYSTIC LAKE	MT	0.03E	0.04

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BCNW4	NEWCASTLE 5E	WY	0.03E	0.04
NRTC2	NORTHGLENN	CO	0.03	0.04
COAD40	NORTHGLENN 1WSW	CO	0.03E	0.04
OFNM7	OFALLON	MO	0.03E	0.04
OMBN1	OMAHA 8W	NE	0.03E	0.04
OROC2	ORODELL, BOULDER CR	CO	0.03E	0.04
OSGW4	OSAGE	WY	0.03E	0.04
UDFC2	PARKER	CO	0.03E	0.04
SAPC2	PARKER	CO	0.03E	0.04
PKKC2	PARKER 1SE	CO	0.03E	0.04
PKRC2	PARKER 6E	CO	0.03E	0.04
PBNW4	PINE BLUFFS 10NW	WY	0.03E	0.04
PBFW4	PINE BLUFFS 5W	WY	0.03E	0.04
PTTC2	PLATTE SPRINGS	CO	0.03E	0.04
PTLC2	PLATTEVILLE 2NNW	CO	0.03E	0.04
PTRN1	POTTER	NE	0.03E	0.04
WCAS2	PRINGLE 5SE	SD	0.03	0.04
CHRS2	REDSHIRT, CHEYENNE R	SD	0.03	0.04
RKSM8	ROCK SPRINGS	MT	0.03E	0.04
WREM8	ROSCOE, W ROSEBUD CR	MT	0.03E	0.04
MOFSA007	RUSH HILL 3S	MO	0.03E	0.04
LOVC2	SEDALIA, PLUM CREEK	CO	0.03E	0.04
SGOM8	SHENANGO RAWS	MT	0.03	0.04
SHRW4	SHIRLEY BASIN	WY	0.03	0.04
CHEY037	SIDNEY 14WSW	NE	0.03E	0.04
SDY	SIDNEY-RICHLAND AP	MT	0.03E	0.04
SIMK1	SIMPSON, SOLOMON R	KS	0.03	0.04
SPCW4	SOUTH PASS CITY 3NNE	WY	0.03E	0.04
SET	ST CHARLES	MO	0.03	0.04
STNM8	STANFORD	MT	0.03E	0.04
STRC2	STERLING	CO	0.03E	0.04
COLR404	STOVE PRAIRIE 3SSE	CO	0.03E	0.04
SRRN1	SUPERIOR 4E	NE	0.03	0.04
TFRW4	TEN SLEEP 4NE	WY	0.03E	0.04
THOC2	THORNTON	CO	0.03E	0.04

COAD22	THORNTON 2SSE	CO	0.03E	0.04
TRON8	TROTTERS 3SSE	ND	0.03E	0.04
HUTM8	UTICA 11WSW	MT	0.03E	0.04
VLVN8	VELVA	ND	0.03E	0.04
0423N8	VENTURA 4NW	ND	0.03E	0.04
COLR672	VIRGINIA DALE 7SSW	CO	0.03E	0.04
WPRW4	WAPITI 1W	WY	0.03E	0.04
LOVM7	WARSAW 2N	MO	0.03E	0.04
WGTC2	WELLINGTON 5WNW	CO	0.03E	0.04
WLDW4	WHEATLAND 4N	WY	0.03E	0.04
WLLW4	WILLWOOD DAM	WY	0.03E	0.04
WNDS2	WIND CAVE NATL PARK	SD	0.03E	0.04
WITM8	WINNETT 12SW	MT	0.03E	0.04
WRVM8	WISE RIVER 3WNW	MT	0.03E	0.04
YLAW4	YELLOWSTONE(MAMMOTH)	WY	0.03E	0.04
YMAC2	YUMA 10NW	CO	0.03E	0.04
ARTS2	ARTAS	SD	0.02E	0.02
CRDK1	AUGULIS, RICH	KS	0.02E	0.02

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BLYC2	BAILEY	CO	0.02E 0.02
DGDM7	BALLWIN	MO	0.02E 0.02
BRNK1	BARNARD, SALT CR	KS	0.02E 0.02
BAYM8	BAYLOR	MT	0.02E 0.02
BEAM8	BEAGLE SPRINGS	MT	0.02E 0.02
BELK1	BELOIT	KS	0.02 0.02
BONM7	BOONVILLE 4SSE	MO	0.02 0.02
BOUC2	BOULDER	CO	0.02E 0.02
BWSM8	BOZEMAN 4W AGRIMET	MT	0.02E 0.02
BZMM8	BOZEMAN 6W EXP FARM	MT	0.02E 0.02
BRTM8	BRITTON SPRINGS	MT	0.02E 0.02
BCOC2	BROOMFIELD	CO	0.02E 0.02
COMR69	BRUSH	CO	0.02E 0.02
COMR6	BRUSH 2W	CO	0.02E 0.02
BNVC2	BUENA VISTA 2S	CO	0.02E 0.02
CDYW4	BUFFALO BILL DAM	WY	0.02E 0.02
BUMC2	BUFFALO CREEK	CO	0.02E 0.02
BULW4	BULL LAKE OUTFLOW	WY	0.02E 0.02
BURK1	BURR OAK, WHITE ROCK	KS	0.02E 0.02
BSHN1	BUSHNELL, LODGEPOLE	NE	0.02E 0.02
BUTM7	BUTLER	MO	0.02E 0.02
CALM7	CALIFORNIA	MO	0.02 0.02
CLVM8	CALVERT CREEK	MT	0.02E 0.02
CSRN1	CASTLE ROCK	NE	0.02E 0.02
CENW4	CENTENNIAL 1NE	WY	0.02E 0.02
CKVC2	CLARKVILLE 1N	CO	0.02E 0.02
RATW4	CODY 12WNW	WY	0.02 0.02
CNK	CONCORDIA	KS	0.02 0.02
CONK1	CONCORDIA 1W	KS	0.02E 0.02
CFRC2	CONIFER 3W	CO	0.02E 0.02
CNTM8	CONTENT 3SSE	MT	0.02E 0.02
COVK1	COVERT	KS	0.02E 0.02
CRDW4	CRANDALL CREEK	WY	0.02E 0.02

OSKN1	CRESCENT LAKE REFUGE	NE	0.02E	0.02
CRAS2	CUSTER 4N	SD	0.02E	0.02
DYTW4	DAYTON	WY	0.02E	0.02
DECM7	DECATURVILLE	MO	0.02E	0.02
DUGW4	DOUGLAS 17NE	WY	0.02E	0.02
EGLM8	EAST GLACIER	MT	0.02E	0.02
EKYC2	ECKLEY 14N	CO	0.02E	0.02
EMTS2	EDGEMONT	SD	0.02	0.02
ELON1	ELLSWORTH	NE	0.02E	0.02
ENSM8	ENNIS	MT	0.02E	0.02
ENNM8	ENNIS RAWS	MT	0.02E	0.02
ESTW4	ESTERBROOK RAWS	WY	0.02E	0.02
COB0141	ESTES PARK 11SE	CO	0.02	0.02
COCC11	EVERGREEN 8NW	CO	0.02E	0.02
FLTM8	FLATWILLOW 4ENE	MT	0.02E	0.02
FLEC2	FLEMING AMRAD	CO	0.02E	0.02
FLTN8	FULLERTON 1ESE	ND	0.02E	0.02
0189N8	FULLERTON 1NE	ND	0.02E	0.02
0388N8	GACKLE 11S	ND	0.02E	0.02
GARN8	GARRISON DAM	ND	0.02E	0.02

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GLDK1	GLEN ELDER 2SE	KS	0.02E	0.02
GLNK1	GLEN ELDER DAM	KS	0.02E	0.02
GNAM8	GLENTANA 4SW	MT	0.02E	0.02
GURW4	GUERNSEY 2NW	WY	0.02E	0.02
HDNM8	HARDIN	MT	0.02E	0.02
HRDM8	HARDIN 3E	MT	0.02E	0.02
HRKM8	HARKNESS RAWS	MT	0.02E	0.02
3HT	HARLOWTON	MT	0.02E	0.02
HLWM8	HARLOWTON 1SW	MT	0.02E	0.02
HCHN1	HARRISBURG 10NW	NE	0.02	0.02
HSBN1	HARRISBURG 12WNW	NE	0.02E	0.02
HBGN1	HARRISBURG 4SSW	NE	0.02	0.02
HRNN1	HARRISON	NE	0.02E	0.02
CABN1	HARRY STRUNK RES	NE	0.02	0.02
COPK59	HARTSEL 15SSW	CO	0.02E	0.02
ZEAK1	HAYS 11NE	KS	0.02E	0.02
HEBN8	HEBRON	ND	0.02E	0.02
HICS2	HILL CITY	SD	0.02E	0.02
HRSC2	HORSETOOTH RESERVOIR	CO	0.02E	0.02
HUDW4	HUDSON	WY	0.02	0.02
HYRW4	HYATT RANCH	WY	0.02E	0.02
COCC17	IDAHO SPRINGS 1ENE	CO	0.02E	0.02
JAC	JACKSON HOLE AIRPORT	WY	0.02E	0.02
ICBM7	K C (OP ALERT #1900)	MO	0.02E	0.02
KRRM7	KC ROCKHILL, BRUSH CR	MO	0.02E	0.02
LMRN8	LA MOURE	ND	0.02E	0.02
LPTC2	LA PORTE	CO	0.02E	0.02
COLR254	LAPORTE	CO	0.02E	0.02
LEXS2	LENNOX (AMRAD)	SD	0.02E	0.02
ZUFK1	LIEBENTHAL	KS	0.02E	0.02
LINN8	LINTON 4N	ND	0.02E	0.02

LTHN8	LITCHVILLE 2NW	ND	0.02E	0.02
LGMC2	LONGMONT 2NE AMRAD	CO	0.02E	0.02
LUTC2	LONGMONT 6NW	CO	0.02E	0.02
LBZM7	MACON, LTL CHARITON	MO	0.02	0.02
MAAM8	MALTA #2	MT	0.02E	0.02
MREN8	MANDAREE, BEAR DEN CR	ND	0.02E	0.02
COLR253	MASONVILLE 8NW	CO	0.02E	0.02
0853N8	MAX 8N	ND	0.02E	0.02
MCLM8	MC LEOD 12SSW	MT	0.02E	0.02
MCGN1	MCGREW 4WNW	NE	0.02E	0.02
HACM8	MILES CITY 17NE	MT	0.02E	0.02
WIXM7	MOBERLY (KWIX RADIO)	MO	0.02	0.02
MOFSA175	MOBERLY 3N	MO	0.02E	0.02
MONN8	MONTPELIER	ND	0.02	0.02
MRLN1	MORRILL WELL	NE	0.02E	0.02
MATN8	MOTT 1N	ND	0.02E	0.02
MLKN1	MURRAY LAKE	NE	0.02E	0.02
NYEM8	NYE #2	MT	0.02E	0.02
OPGK1	O P #1600 (HAWTH VY)	KS	0.02E	0.02
OKSN8	OAKES 6SE	ND	0.02E	0.02
OPMM8	OPHEIM 12SSE	MT	0.02E	0.02
OSBK1	OSBORNE, SOLOMON R	KS	0.02	0.02

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PRKC2	PARKER 1W GDDS	CO	0.02E	0.02
BRW4	PINEDALE 14SE	WY	0.02E	0.02
PGEN8	PINGREE, PIPESTEM CR	ND	0.02E	0.02
PLZN8	PLAZA 10S	ND	0.02E	0.02
NOVC2	RAYMER 2N	CO	0.02E	0.02
REJ	REDIG	SD	0.02E	0.02
RXE	REXBURG AIRPORT	ID	0.02E	0.02
RHAN8	RHAME 8S	ND	0.02E	0.02
RIVN8	RIVERDALE	ND	0.02E	0.02
ROP8	ROUNDUP	MT	0.02E	0.02
OSCM8	ROY 2SE RAWS	MT	0.02E	0.02
ROYN1	ROYAL 2SE	NE	0.02E	0.02
COCF8	SALIDA 6NW	CO	0.02E	0.02
SAVM8	SAVAGE	MT	0.02E	0.02
SCNK1	SCHOENCHEN 1W	KS	0.02E	0.02
ZECK1	SCHOENCHEN 6WNW	KS	0.02E	0.02
SELM8	SEELEY LAKE	MT	0.02E	0.02
SHLW4	SHELL 1NE	WY	0.02E	0.02
SDYM8	SIDNEY 1NE	MT	0.02E	0.02
SINN1	SIDNEY 1SSE	NE	0.02E	0.02
SDYN1	SIDNEY 2S	NE	0.02E	0.02
SNY	SIDNEY AIRPORT	NE	0.02	0.02
SMOK1	SMOLAN 1NE	KS	0.02E	0.02
STEC2	STERLING 5NW AMRAD	CO	0.02E	0.02
COLR251	STOVE PRAIRIE 2WNW	CO	0.02E	0.02
SUNS2	SUNDAY GULCH	SD	0.02	0.02
TMPM8	TAMPICO, MILK R	MT	0.02E	0.02
DKRM8	TONGUE RIVER DAM	MT	0.02E	0.02
TRUW4	TROUT CREEK	WY	0.02E	0.02

CHER010	VALENTINE 19SSW	NE	0.02E	0.02
VALN8	VALLEY CITY 3NNW	ND	0.02E	0.02
GGCM7	VALLEY PARK	MO	0.02E	0.02
VRMS2	VERMILLION 2SE	SD	0.02E	0.02
VACM8	VIRGINIA CITY	MT	0.02E	0.02
WNTM7	WENTZVILLE	MO	0.02E	0.02
WPCC2	WEST PLUM CREEK	CO	0.02E	0.02
PRMM8	WILD HORSE RAWS	MT	0.02E	0.02
WILS2	WILSON CREEK CAMP	SD	0.02	0.02
WINM8	WINIFRED	MT	0.02E	0.02
JDRM8	WINIFRED, JUDITH R	MT	0.02E	0.02
WNTM8	WINNETT 8ESE	MT	0.02E	0.02
WYLM8	WYOLA 1SW	MT	0.02E	0.02
YLWW4	YELLOWSTONE(MAMMOTH)	WY	0.02E	0.02
BHRM8	YELLOWTAIL DAM	MT	0.02E	0.02
ZAPN8	ZAP, SPRING CR	ND	0.02E	0.02
ADRN8	ADRIAN	ND	0.01E	0.01
ALBW4	ALBIN	WY	0.01E	0.01
ABNW4	ALBIN #2	WY	0.01E	0.01
ALEN8	ALEXANDER 4NNW	ND	0.01E	0.01
ALCN1	ALLIANCE 8SSW	NE	0.01	0.01
AGRN1	ANGORA 1WNW	NE	0.01E	0.01
ANGN1	ANGORA 8NE	NE	0.01E	0.01
TBKM7	ARNOLD 4E	MO	0.01E	0.01

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ARAS2	ARTAS 1S	SD	0.01E	0.01
ASHM8	ASHLAND RANGER STA	MT	0.01E	0.01
NFSM8	AUGUSTA 25NW	MT	0.01E	0.01
BEVM7	AVA 1S RAWS	MO	0.01	0.01
BAWC2	BAILEY 7ESE	CO	0.01E	0.01
BFRN8	BALFOUR 3SW	ND	0.01E	0.01
BALM7	BALLWIN	MO	0.01E	0.01
BADK1	BARNARD 7W	KS	0.01E	0.01
MORR013	BAYARD 6SE	NE	0.01E	0.01
BOUS2	BEAR BUTTE CREEK	SD	0.01E	0.01
BELM7	BELLEFONT NEIGHBORS	MO	0.01E	0.01
BVWM7	BELLEVIEW 4SE	MO	0.01E	0.01
BUAN8	BEULAH 2NW	ND	0.01E	0.01
RPKW4	BIG HORN 10WSW	WY	0.01E	0.01
BVKW4	BIG HORN 4W	WY	0.01	0.01
CYKW4	BIG HORN, CONEY CR	WY	0.01E	0.01
BGTM8	BIG TIMBER	MT	0.01E	0.01
BTMM8	BIG TIMBER 1E	MT	0.01E	0.01
BSNK1	BISON	KS	0.01E	0.01
BOJC2	BOULDER	CO	0.01E	0.01
COB081	BOULDER 3N	CO	0.01E	0.01
BORC2	BOULDER 8NE	CO	0.01E	0.01
BZLM8	BOZEMAN 5W	MT	0.01E	0.01
BRDM8	BREDETTE	MT	0.01E	0.01
BGWN1	BRIDGEPORT 18WSW	NE	0.01E	0.01
BDLC2	BRIGGS DALE	CO	0.01E	0.01
BKVK1	BROOKVILLE	KS	0.01E	0.01

BEVK1	BROOKVILLE	KS	0.01E	0.01
0787N8	BUCHANAN 2S	ND	0.01E	0.01
BROK1	BURR OAK 1N	KS	0.01	0.01
BTEN8	BUTTE 5SE	ND	0.01E	0.01
CMNM8	CAMERON	MT	0.01E	0.01
CMRN1	CAMERON 20NE	NE	0.01	0.01
CSHM8	CASHE CREEK	MT	0.01E	0.01
CODG90	CASTLE ROCK 2E	CO	0.01E	0.01
CAWK1	CAWKER CITY	KS	0.01E	0.01
CENC2	CENTER 4SSW	CO	0.01E	0.01
CSTM7	CHESTERFIELD	MO	0.01E	0.01
CHEW4	CHEYENNE 7W	WY	0.01E	0.01
POCW4	CLARK 20WSW	WY	0.01E	0.01
CYDM8	CLYDE PARK 1W	MT	0.01E	0.01
CDAW4	CODY 25NW	WY	0.01E	0.01
CMBM8	COMBINATION	MT	0.01E	0.01
SACC2	COMMERCE CITY 1W	CO	0.01E	0.01
CNKK1	CONCORDIA, REPUB R	KS	0.01	0.01
CORM8	CORWIN SPRINGS	MT	0.01E	0.01
CAG	CRAIG-MOFFAT AIRPORT	CO	0.01	0.01
CUSS2	CUSTER	SD	0.01E	0.01
CUT	CUSTER	SD	0.01	0.01
CUTS2	CUSTER (AMRAD)	SD	0.01E	0.01
CRRS2	CUSTER 2SW RAWS	SD	0.01E	0.01
DTWN1	DALTON 13W	NE	0.01E	0.01
DEWN1	DE WITT, TURKEY CR	NE	0.01	0.01

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DEVW4	DEAVER	WY	0.01E	0.01
DCRC2	DEER CREEK CANYON	CO	0.01E	0.01
DENM8	DENTON 1NNE	MT	0.01E	0.01
DGLW4	DOUGLAS 1SE	WY	0.01E	0.01
DWNK1	DOWNS	KS	0.01E	0.01
TOFW4	DUBOIS 41NNW	WY	0.01E	0.01
DFTN1	DUTCH FLATS WELL	NE	0.01E	0.01
EGLW4	EAGLE	WY	0.01E	0.01
EGHM8	EAGLEHEAD	MT	0.01E	0.01
EKLC2	ECKLEY	CO	0.01E	0.01
EGYN8	EDGELEY 3WNW	ND	0.01E	0.01
EDTS2	EDGEMONT 13NW	SD	0.01E	0.01
EGMS2	EDGEMONT 23NNW	SD	0.01E	0.01
WHSM8	ELK PEAK SNOTEL	MT	0.01E	0.01
ELLK1	ELLIS, BIG CREEK	KS	0.01E	0.01
EPPN8	EPPING	ND	0.01E	0.01
COB087	ERIE 3SW	CO	0.01E	0.01
ESPC2	ESTES PARK 4WNW	CO	0.01	0.01
FENM7	FENTON	MO	0.01E	0.01
SMTW4	FILMORE, LTL LARAMIE	WY	0.01	0.01
MTDN1	FLAXVILLE 5E	MT	0.01E	0.01
FMMC2	FLEMING 3SW	CO	0.01E	0.01
FORC2	FORT COLLINS (CSU)	CO	0.01E	0.01
COLR259	FORT COLLINS 3W	CO	0.01E	0.01
COLR406	FORT COLLINS 4N	CO	0.01E	0.01

FPKM8	FORT PECK DAM	MT	0.01E	0.01
0391N8	FREDONIA 1E	ND	0.01E	0.01
BRAM8	GEYSER 7NE RAWS	MT	0.01E	0.01
GBNM8	GIBSON 2NE	MT	0.01E	0.01
GBSM8	GIBSON 4SW	MT	0.01E	0.01
AGSM8	GIBSON DAM	MT	0.01E	0.01
GDMM8	GIBSON LAKE	MT	0.01E	0.01
WYPT9	GLEND0 6ENE	WY	0.01E	0.01
GDOW4	GLEND0 6NE	WY	0.01E	0.01
GJT	GRAND JUNCTION	CO	0.01	0.01
GRNC2	GRANT, SOUTH PLATTE	CO	0.01E	0.01
GSSM8	GRASS RANGE	MT	0.01E	0.01
FWFM8	GRASS RANGE 19SSE	MT	0.01E	0.01
GXYC2	GREELEY	CO	0.01E	0.01
GRLC2	GREELEY 2S (UNC)	CO	0.01E	0.01
CHEY002	GURLEY 6SE	NE	0.01E	0.01
HGEN8	HAGUE	ND	0.01E	0.01
HLMM8	HARLEM 20S	MT	0.01E	0.01
FBLM8	HARLEM 4SSE	MT	0.01	0.01
BRRN1	HARRISBURG 15SW RAWS	NE	0.01E	0.01
ABNN1	HARRISBURG 19SW	NE	0.01E	0.01
COPK57	HARTSEL 12SSE	CO	0.01E	0.01
HARN8	HARVEY 1S	ND	0.01E	0.01
HWPk1	HAYS	KS	0.01E	0.01
HAYK1	HAYS	KS	0.01E	0.01
HASK1	HAYS 1S	KS	0.01E	0.01
ZEMK1	HAYS 9WSW	KS	0.01E	0.01
HYS	HAYS AIRPORT	KS	0.01E	0.01

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HYSK1	HAYS, BIG CREEK	KS	0.01	0.01
HRTM8	HEART BUTTE	MT	0.01E	0.01
HTBM8	HEART BUTTE 1NW	MT	0.01E	0.01
HRWM8	HELENA 3N RAWS	MT	0.01E	0.01
HLLC2	HIGHLAND DITCH	CO	0.01E	0.01
HOBM8	HOBSON	MT	0.01E	0.01
HOKI4	HORNICK, W FK DITCH	IA	0.01	0.01
HTRC2	HORSETOOTH RESERVOIR	CO	0.01E	0.01
HNTK1	HUNTER	KS	0.01E	0.01
ILIM8	ILIAD	MT	0.01E	0.01
BLCM8	INGOMAR 16NE	MT	0.01E	0.01
INNK1	INMAN	KS	0.01E	0.01
JRNM8	JORDAN 43ENE	MT	0.01E	0.01
ICSM7	KANSAS CITY 103RD ST	MO	0.01E	0.01
KCEW4	KAYCEE	WY	0.01	0.01
KAYW4	KAYCEE, MID POWDER R	WY	0.01	0.01
IRK	KIRKSVILLE	MO	0.01	0.01
LNFW4	L NORTH FORK	WY	0.01E	0.01
LKYW4	LAKE YELLOWSTONE	WY	0.01E	0.01
BAFM8	LAME DEER 6ENE	MT	0.01	0.01
LDRW4	LANDER 3W	WY	0.01E	0.01
LDKM8	LANDUSKY 20S	MT	0.01E	0.01
YQL	LETHBRIDGE	AB	0.01E	0.01

LHBN1	LINCOLN, HAINES BR	NE	0.01E	0.01
LIVM8	LIVINGSTON 5S	MT	0.01E	0.01
LOCM8	LOCATE, POWDER R	MT	0.01E	0.01
LDGN1	LODGEPOLE	NE	0.01E	0.01
LTTK1	LORETTA	KS	0.01E	0.01
LSTW4	LOST CREEK	WY	0.01E	0.01
LSVC2	LOUISVILLE 2SW	CO	0.01E	0.01
COLR731	LOVELAND 4WSW	CO	0.01E	0.01
COB085	LYONS 1NNW	CO	0.01E	0.01
THUC2	LYONS 7S	CO	0.01E	0.01
LNSC2	LYONS, ST VRRAIN CR	CO	0.01E	0.01
QADW4	MAMMOTH 25WSW	WY	0.01E	0.01
MRON8	MARION	ND	0.01E	0.01
MARN8	MARION 3S	ND	0.01E	0.01
YXH	MEDICINE HAT	AB	0.01E	0.01
MGZM8	MILLEGAN 14SE	MT	0.01E	0.01
MIZM8	MIZPAH 4NNW	MT	0.01E	0.01
MNTM7	MONTAUK ST PARK	MO	0.01E	0.01
MTNM8	MOULTON RESERVOIR	MT	0.01E	0.01
MULN1	MULLEN 21NW	NE	0.01E	0.01
P60	N LAKE YELLOWSTONE	WY	0.01	0.01
NASM8	NASHUA #2	MT	0.01E	0.01
NSHM8	NASHUA, MILK R	MT	0.01E	0.01
FPM8	NASHUA, MISSOURI R	MT	0.01E	0.01
NTAK1	NATOMA	KS	0.01E	0.01
NRVC2	NEW RAYMER	CO	0.01E	0.01
NTWN8	NEW TOWN 4W	ND	0.01E	0.01
NWCW4	NEWCASTLE	WY	0.01E	0.01
NCLW4	NEWCASTLE	WY	0.01E	0.01
NPCN1	NORTHPORT CANAL	NE	0.01E	0.01

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FOFW4	OLD FAITHFUL	WY	0.01E	0.01
OLFW4	OLD FAITHFUL	WY	0.01E	0.01
OFAW4	OLD FAITHFUL	WY	0.01E	0.01
OPNM8	OPHEIM 10N	MT	0.01E	0.01
PADC2	PADRONI	CO	0.01E	0.01
PHIW4	PHILLIPS	WY	0.01E	0.01
NFSC2	PINE, NF SO PLATTE R	CO	0.01E	0.01
JAMN8	PIPESTEM RES	ND	0.01	0.01
POGM8	PORT OF MORGAN	MT	0.01E	0.01
PFSW4	POWELL FIELD STATION	WY	0.01E	0.01
POWW4	POWELL RADIO	WY	0.01E	0.01
REDM8	RED LODGE 6SSW	MT	0.01E	0.01
ARAW4	RIVERTON 7SW	WY	0.01E	0.01
RUPM8	ROUNDUP, MUSSELSHELL	MT	0.01E	0.01
SCSK1	SCHOENCHEN 2E	KS	0.01E	0.01
SCBM8	SCOBAY	MT	0.01E	0.01
SCOM8	SCOBAY 4NW	MT	0.01E	0.01
WCRN1	SCOTTSBLUFF 10NE	NE	0.01E	0.01
SEDC2	SEDALIA 4SSE	CO	0.01E	0.01
SIAC2	SEDALIA 5SSE AMRAD	CO	0.01E	0.01
SDGC2	SEDGWICK 5S	CO	0.01E	0.01

SEMW4	SEMINOE DAM	WY	0.01E	0.01
SETW4	SEMINOE DAM DCP	WY	0.01E	0.01
SHR	SHERIDAN AIRPORT	WY	0.01	0.01
WGSW4	SHERIDAN SCHOOL	WY	0.01E	0.01
SIDN1	SIDNEY 6NNW	NE	0.01E	0.01
CHEY035	SIDNEY 7W	NE	0.01E	0.01
SMM8	SIMMS 1NE	MT	0.01E	0.01
SSRM8	SIMMS, SUN R	MT	0.01E	0.01
SKLM8	SKYLARK TRAIL	MT	0.01E	0.01
SPLW4	SPLIT ROCK CREEK	WY	0.01	0.01
SPDM8	SPRINGDALE	MT	0.01E	0.01
SMIM8	ST MARIE	MT	0.01E	0.01
0362N8	STEELE 7SW	ND	0.01E	0.01
SKTM7	STOCKTON 1E	MO	0.01E	0.01
SREN8	STREETER 5NW	ND	0.01E	0.01
STRN8	STREETER 5NW	ND	0.01E	0.01
0392N8	STREETER 5S	ND	0.01E	0.01
SNRM8	SUN RIVER 4S	MT	0.01E	0.01
SDCW4	SUNDANCE 8NNW	WY	0.01E	0.01
SXXW4	SUSSEX, POWDER R	WY	0.01	0.01
TERM8	TERRY 1E	MT	0.01E	0.01
THRW4	THOROFARE	WY	0.01E	0.01
TRTN8	TROTTERS, BEAVER CR	ND	0.01E	0.01
TURN8	TURTLE LAKE 4N	ND	0.01E	0.01
ULLM8	ULM 8SE	MT	0.01E	0.01
UNDN8	UNDERWOOD	ND	0.01E	0.01
VLW4	VALLEY, SF SHOSHONE	WY	0.01E	0.01
ZEFK1	VICTORIA 7N	KS	0.01E	0.01
AXTM8	VIRGINIA CITY 15SE	MT	0.01E	0.01
VOLM8	VOLBORG	MT	0.01E	0.01
WRRW4	WARREN PEAK	WY	0.01E	0.01
WTRC2	WATERDALE	CO	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC

DATE=Jun 21, 2011 - 14:02:17

STATION			PERIOD
ID	DESCRIPTION	STATE	06/21 SUM
-----	-----	-----	-----
WGLM8	WEST GLACIER 1N	MT	0.01E 0.01
WSYM8	WEST YELLOWSTONE	MT	0.01E 0.01
SMHM8	WHITE SULPHUR 25NNW	MT	0.01E 0.01
WSRM8	WHITE SULPHUR SPRNGS	MT	0.01E 0.01
COMR65	WIGGINS	CO	0.01E 0.01
COYU58	WRAY 1WSW	CO	0.01E 0.01
WGTW4	WRIGHT 12W	WY	0.01E 0.01
YOCK1	YOCEMENTO, BIG CR	KS	0.01E 0.01
YUMC2	YUMA	CO	0.01 0.01
DYIM8	ZORTMAN 10SW	MT	0.01E 0.01

>>>>>> STOP

0 CPU TIME USED = 0 MINUTES, 0 SECONDS

0 CLOCK TIME USED = 0 MINUTES, 0 SECONDS

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 10:33 AM
Subject: 21 June 2011 Boat Report 11172
Attachments: BoatReportDaily11172.pdf; Daily Gage 0621.pdf

Attached is the Boat report for June 21, 2011 #11172.

Thank you,

[REDACTED]
US Army Corps of Engineers
MO River Area Office
Napoleon, MO 64074
[REDACTED]

Check us out on Facebook!
www.facebook.com/MORiverNavigation

MISSOURI RIVER BARGE TRAFFIC

REPORT#: 11172							DATE: 21 JUNE 2011
BOAT NAME	RIVER MILE	UP DN	DEST	LOADS	EMPTY	DRAFT	REMARKS
JEFFERSON CITY RIVER TERMINAL							
ALLISON MARIE	228		186	2	4		Planning to move dredge, crane barge and 4 material barges to Rocheport 6/22
LESLIE ANN	143						Stand by
JAMIE LEIGH	136	DN	0		3		
TARKIO	143						Working, tending to dredge Ray Marie
HALLE KATE	143						Stand by
MARGE I	143						Working, tending to dredge Kathy Lee
MAGNOLIA MARINE							
JENNIE DEHMER							Off MOR
LINDA TAYLOR							Off MOR
LESLIE B							Off MOR
MR LAMPTON	0		360	2		8.6	Planning to be on the MOR afternoon 6/22
RIVER MARINE ENTERPRISES LLC							
MARY LYNN							Off MOR
HERMANN SAND & GRAVEL							
KATHRYN ANN	88	DN	0	1		9.3	Clay
MEL SUE	97						Stand By
W. A. ELLIS CONSTRUCTION							
DAISY BELL	221	UP DN	219				Placing rock in area of rm 221
JOHANNE	219	UP DN	221				Loading rock at rm 219
WESTERN CONTRACTING							
EXPEDITION	661						Stand by
CAPT. JOE	661						Stand by
CORPS OF ENGINEERS							
BRANDY FITZHUGH	627						Stand by
MISSOURI	627						Stand by
JUMBO	104.5						Stand by
STEPHENSON	104.5						Stand by
STEPHENSON II	104.5						Stand by
CLEM MEYER II							Off MOR
COAST GUARD							
CHEYENNE							Off MOR
GASCONADE							Homeport

RIVER MILES AND STAGES FOR HIGH WATER LEVEE CONCERNS

River Mile	Station	Stage in Feet
278.2 - 278.3	Waverly	21
298.3 - 298.6	Waverly	21
298.3 - 300.2	Waverly	21
302.2 - 302.5	Waverly	21
367.0 - 367.5	Kansas City	17
418.2 - 428.0	Atchison	20
428.0 - 437.3	St. Joseph	22
441.7 - 456.5	St Joseph	17

River Mile	Station	Stage in Feet
465.5 - 470.5	St Joseph	19
473.5 - 476.0	St Joseph	19
476.0 - 482.5	St Joseph	19
492.5 - 493.6	Rulo	20
493.6 - 494.0	Rulo	20
498.9 - 499.0	Rulo	20
501.9 - 502.0	Rulo	20
506.5 - 507.1	Rulo	20

Kansas City District, Corps of Engineers Water Management Section RADIO ROOM DAILY GAGES

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME GMT	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)

Missouri River							
Sioux City	732.3	1057.0	30	21JUN2011 12:00	34.05	0.16	0.41
Omaha	615.9	948.2	29	21JUN2011 12:00	34.42	0.15	0.87
Nebraska City	562.6	905.4	18	21JUN2011 12:00	26.77	0.19	0.27
Rulo	498.0	837.2	17	21JUN2011 11:30	26.05	-0.16	0.36
St. Joseph	448.2	788.2	17	21JUN2011 11:30	24.55	0.11	0.58
Kansas City	366.1	706.4	32	21JUN2011 11:30	26.29	0.04	-0.11
Napoleon	328.7	680.2	17	21JUN2011 11:30	21.89	0.02	-0.33
Waverly	293.4	646.0	20	21JUN2011 11:30	24.80	0.02	-0.35
Glasgow	226.3	586.1	25	21JUN2011 11:30	26.06	-0.08	-0.08
Boonville	197.1	565.4	21	21JUN2011 11:30	21.77	-0.17	0.03
Jefferson City	143.9	520.1	23	21JUN2011 12:00	21.78	0.19	0.37
Hermann	97.9	481.6	21	21JUN2011 11:30	21.50	0.03	-0.22
St. Charles	28.2	413.6	25	21JUN2011 12:00	24.69	-0.06	-0.15
St. Louis-Missi R.	0.0	379.9	30	21JUN2011 12:00	33.38	-0.14	-0.37

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)

Gasconade River							
Jerome			15	21JUN2011 11:45	3.28	0.13	-0.15
Rich Fountain			20	21JUN2011 12:00	4.47	-0.14	-1.22
Osage River							
St. Thomas			23	21JUN2011 11:45	11.48	0.62	4.10
Grand River							
Chillicothe	60.1	658.7	24	21JUN2011 11:45	5.85	-0.02	-0.21
Sumner	36.0	631.2	26	21JUN2011 11:45	11.19	-0.16	-0.46

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 10:21 AM
To: [REDACTED]
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] Farhat, Jody S NWD02; [REDACTED]
[REDACTED] Bertino, John J Jr NWO; [REDACTED] Ruch, Robert J COL
[REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED]
Cc: Oldham, Margaret NWO; Blechinger, Erik T NWO; [REDACTED] Farmer,
Monique L NWO; [REDACTED] Williamson, Eileen L NWO; [REDACTED]
Subject: RE: Missouri River Aerial Photos - Blair to Ponca - 20 June

Missouri River aerial flood photos taken 20 June from Blair to Ponca are located on branch shared drive at 2011_Flood/Missouri River Aerial Photos/Mo River Blair to Ponca 20 June 2011. Photos are in directories by reach.

Thanks,

[REDACTED]
Hydraulic Engineer
Water Control & Water Quality Section
[REDACTED] (office)
[REDACTED] (cell)

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 10:18 AM
To: [REDACTED]
Cc: Farhat, Jody S NWD02; MRJIC
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Great idea!

Jody, any input would be truly appreciated -- I know you are more than busy these days so did not want to impose upon your time. Thanks!!

-----Original Message-----

From: [REDACTED]
Sent: Tuesday, June 21, 2011 10:15 AM
To: [REDACTED]
Wankum, Robin D NWK; Harberg, Mark NWO
Cc: Farhat, Jody S NWD02; MRJIC
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I would recommend a response from Jody and/or the MRJIC. This would ensure a uniform message up and down the basin. All of these same issues were brought up in the upper basin also so it is not unique to this individual.

[REDACTED]

-----Original Message-----

From: [REDACTED]
Sent: Tuesday, June 21, 2011 9:43 AM
To: [REDACTED]
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Yesterday I received the email message from Mr Stephens. Below is a draft response to Mr Stephens email note to me. Please feel free to edit as you see fit to help craft our important response message. Do you see merit in also sending to the STL Post (I did verify it was included in the 12 June editorial section)?

Mr. Stephens,

I do appreciate you taking the time to write me a letter and for expressing your concerns regarding this historic Missouri River flood event. As you might expect, I do not agree with your assumptions and would like the opportunity to share some information (thoughts?) with you.

Background for current situation:

- First, it is important to recognize that each flood is unique. For example, the 1993 flood you referenced resulted from extensive and repeated high rainfall events on the lower plains and across Missouri. Uncontrolled flows from rivers such as the Chariton, Grand, and Platte contributed extensively to that flood event. To date the 2011 event has been the result of historic snow and rain events in the upper basin. (is all this correct?)
- 2010 was the third highest water year on record for the entire basin. As the 2010 flood subsided late in the summer, the Corps began to release high levels of water from the six mainstem reservoirs throughout the winter. The releases were slowed in January due to significant ice development and the potential for ice jam flooding. Releases were increased once that threat had passed.
- On January 28, 2011, the reservoir system had full flood capacity for this year's runoff season.
- On May 1, the Corps projected summer releases of 57,500 cfs from Gavins Point Dam; we were on schedule to evacuate the runoff from the record snowpack.
- Then came the extraordinary rainfall during May 2011 - the equivalent of 1 years rain in a two week period! The rains in Montana, the Dakotas and Wyoming resulted in 3 times the monthly average runoff (10.5 million acre-feet vs 3.3 MAF). This was the second highest single month of runoff within the basin since 1898 - the record is 13.2 MAF in April of 1952.
- The reservoir system is operating as planned and designed. In fact, imagine the scenario if the mainstem reservoirs were not in place or allowed to run uncontrolled. The balance is to evacuate water from the entire system as rapidly as possible while recognizing down river constraints.

Operation:

- Since Lewis and Clark returned from their expedition, the Army Engineers have had very close ties to the Missouri River. Over the years, the U.S. Army Corps of Engineers has been charged by Congress to remove snags, protect banks, construct navigation channels and build flood risk management structures (levees and dams) on the Missouri River to provide social and economic benefits to the nation. Some of these development activities on the Missouri River have come at the expense of the river's native fish and wildlife.
- The Corps operates the Missouri River as a system for eight Congressionally authorized purposes (alphabetically) -- fish & wildlife, flood control, hydropower, irrigation, navigation, recreation, water supply, and water quality.
- There are two large water resource projects on the Missouri River - the six mainstem dams and the Bank Stabilization and Navigation Project(BSNP).
- The US Fish and Wildlife Service gave the Corps a Biological Opinion (BO) in 2000 (amended in 2003) which stated our operations of the Missouri River jeopardized the three federally listed species - pallid sturgeon, least tern, and piping plover.
- With local, state and federal input, the Missouri River Mainstem Reservoir System's Master Water Control Manual was approved in 2004 and updated in 2006. This is what guides the operation of the Missouri River for the eight authorized purposes and keeps the Corps in compliance with the BO.

Spring Pulse:

- In response to the needs of the native river fish on the Lower Missouri River, especially the endangered pallid sturgeon, March and May spring pulses from Gavins Point Dam are run when certain conditions exist - adequate water in the reservoirs, high flow limits would not be exceeded downriver.
- Pallid sturgeon need higher spring flows to cue spawning and to link them to other areas of the river during their life cycle. The spring pulse from Gavins Point Dam, located on the Nebraska and South Dakota border, is meant to replicate a natural seasonal rise that prompts the species to spawn.
- Pallid sturgeon are an ancient species protected by the Endangered Species Act.

- Spring pulses created spring rises on the downstream Missouri River. These pulses are designed to mimic the much larger, historic spring rises on the Missouri River, which still occur naturally as one proceeds further down the Lower Missouri River.
- The environmental benefits of the created spring rises are, therefore, to be more significant in the upper 200 miles of the Lower Missouri River from Gavins Point Dam to about Omaha, Nebraska.
- The March 2011 pulse was to be 5,000 cubic feet per second minus the James River flow near its confluence with the Missouri upstream of Sioux City, Iowa. However, the James River was nearly 25,000 cfs (plains snowpack melt) and the Missouri River was already above the downstream flow limits set to reduce or eliminate farmland flooding at Omaha, Nebraska City and Kansas City, Mo. Result was a natural spring pulse from uncontrolled tributaries and not a created pulse. Same held for the May 2011 pulse.

Finally, the Corps does take very seriously its job of operating the Missouri River system to meet the eight authorized purposes. It should be noted that the Corps projects on the Missouri River have provided benefits to the nation in categories such as hydropower, flood risk management, recreation and navigation valued at nearly \$2 billion annually; with a total annual cost to operate these projects of approximately \$120 million. The total Corps investment on the Missouri River mainstem to date has been just over \$4 billion.

Sincerely,

[REDACTED]
Senior Program Manager
Missouri River Recovery Program
US Army Corps of Engineers
[REDACTED]

[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]]
Sent: Monday, June 20, 2011 9:47 AM
To: Fischer, Steven A NWK
Subject: Missouri River Recovery Plan

Mr. Fischer,

Below is a letter that I sent to the St. Louis Post Dispatch, and they published on Sunday June 12, about the Corps mismanagement of the Missouri river. A would appreciate your comments on the letter. I think more and more the public is beginning to understand the abuse of power given to the Corps by congress by causing more and larger floods than would normally occur.

Corps of Engineers wrong again

Last week the Corps of Engineers announced that over the next few weeks they will be releasing up to 150,000 CFS of water from the Gavins Point reservoir on the upper Missouri river, which will cause record flooding down stream. Their explanation for this release was due to heavy rainfall and heavy snow pack in the upper Northern area. Naturally, as always, the public listens and absorbs what the Corps puts out as gospel. However, the farmers and people who have had experience with the Corps over many years fully understand the true reasons for some but not all floods on the Mississippi and Missouri rivers.

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Harold L. Stephens
[REDACTED]
[REDACTED]

West Alton, Mo. 63386
[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 10:15 AM
To: [REDACTED]
NWO; [REDACTED]
Cc: Farhat, Jody S NWD02; MRJIC
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I would recommend a response from Jody and/or the MRJIC. This would ensure a uniform message up and down the basin. All of these same issues were brought up in the upper basin also so it is not unique to this individual.

[REDACTED]

-----Original Message-----
From: [REDACTED]
Sent: Tuesday, June 21, 2011 9:43 AM
To: [REDACTED]
NWO; [REDACTED]
Subject: RE: Missouri River Recovery Plan (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

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Sincerely,

[REDACTED]
Senior Program Manager
Missouri River Recovery Program
US Army Corps of Engineers
[REDACTED]
[REDACTED]
[REDACTED]@usace.army.mil

-----Original Message-----

From: [REDACTED] [mailto:[REDACTED]]

Sent: Monday, June 20, 2011 9:47 AM

To: [REDACTED]

Subject: Missouri River Recovery Plan
[REDACTED]

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Harold L. Stephens
[REDACTED]

West Alton, Mo. 63386
[REDACTED]

[REDACTED]

From: Monty_Gartin@cargill.com
Sent: Tuesday, June 21, 2011 10:00 AM
To: Farhat, Jody S NWD02
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Jody,

Thanks for your quick response and we appreciate your willingness to talk with us. With the current release schedule from Gavin's Point at 150,000 kfs we are maintaining our operations. Our discussion will focus on the triggers that could lead to an increase from Gavin's Point.

Would you be available for a :20 minute discussion with our leadership team on Thursday June 23rd, at 10:00am central time (Dial 866-318-5174 Code# 5052660998). The call would include our campus partners and leaders from the following companies on our site in Blair Nebraska:

- Cargill Inc.
- Evonik Inc.
- Purac Inc.
- Novozymes Inc.
- Natureworks LLC.

We know how busy you are and appreciate your time and the dedication of the entire Army Corp team to minimizing the impact to our community and customers.

Regards,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of choice.

Monty Gartin | Health, Safety & Security Team Leader | Cargill Corn Milling 650 Industrial
Park Drive | Blair, NE 68008 | 402-533-1381 | Cell 402-306-3709 | monty.gartin@cargill.com

[cid:609003111@05022009-1FD7](#) Caring Leadership > Systems Excellence > Injury Free Lifestyle

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [<mailto:Jody.S.Farhat@usace.army.mil>]

Sent: Thursday, June 16, 2011 1:34 PM

To: Gartin, Monty - Monty.Gartin@cargill.com

Cc: [REDACTED]; [REDACTED]
[REDACTED]

Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Monty,

We would be happy to discuss the planned releases with you. As you might expect, we are very busy with the ongoing flood event, so we would prefer setting up a conference call, or if you prefer a face-to-face meeting it would be preferable if you came to our office.

Regards,

Jody Farhat, P.E.

Chief, Missouri River Basin Water Management

jody.s.farhat@usace.army.mil

Office: 402-996-3840

-----Original Message-----

From: Monty Gartin@cargill.com [mailto:Monty Gartin@cargill.com]

Sent: Wednesday, June 15, 2011 4:43 PM

To: Management, Missouri Water NWD02

Subject: Cargill Inc - Blair Nebraska

To Jody Farhat and/or Staff,

We are Cargill Corn Milling in Blair Nebraska, our site is a bio-refinery which includes 6 joint ventures and has an assets value over 2 billion dollars. We have been working with the Army Corps of Engineers from the Omaha District daily. Our relationship with the Corps of engineers has been very positive and we look forward to more interactions.

We recently met with Randall Behm to help us understand the potential impact of the current release to our site. This meeting helped us to better understand the science and the protocols used to manage the current situation on the Missouri river. Randall discussed with us his role and his understanding of the Corps future release plans.

We know how busy you are, but we would also like to meet with you or a senior member of your staff to better understand future plans and release scenarios. We have created a 3.5 mile berm around our site, but are still very concerned with the economic impact to our customers and the state

of Nebraska if we shutdown.

We would like to invite you to our campus for a formal review and discussion on our mutual goals around the safety and well being of our site and community. We look forward to working with the Army Corps of Engineers in a positive and proactive manor. If coming to Blair is not feasible, we are very willing to come to you.

Thank you on behalf of our employees and community,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of choice.

Monty Gartin | Health, Safety & Security Team Leader |Cargill Corn Milling
650 Industrial Park Drive | Blair, NE 68008 | 402-533-1381 | Cell
402-306-3709 | monty_gartin@cargill.com

[cid:609003111@05022009-1FD7](#) Caring Leadership > Systems Excellence > Injury
Free Lifestyle

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 10:00 AM
To: 'James Meyer'
Cc: Farhat, Jody S NWD02
Subject: RE: Frank Pereira visit to Omaha - future NWS staffing at the COE (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Jim,

I don't think we need both ... one of your folks and an HPC expert (Frank Pereira) here on-site together. After June 25th and after the HPC person has left, providing the weather briefing by phone/webmeeting should be more than adequate.

The advantage of having your folks here on-site is that we have gotten to know them, and vice versa, and now have a much better feeling about calling any of them - Dan, Becky, Cathy or Scott - if we have any questions or concerns.

We certainly appreciate the assistance your agency has provided us through this historic event.

[REDACTED]
[REDACTED]
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
[REDACTED]

-----Original Message-----

From: James Meyer [<mailto:James.Meyer@noaa.gov>]
Sent: Monday, June 20, 2011 3:18 PM
To: [REDACTED]
Subject: Frank Pereira visit to Omaha - future NWS staffing at the COE
Importance: High

Hi [REDACTED]

I hope you don't mind that I also asked for your thoughts in regards to an itinerary for Frank at the COE. I do think it would be very good for the HPC folks to see how exactly the COE has been utilizing their guidance during this event. I don't know if they (HPC) are used to their guidance having the potential of producing as big of an impact as with this current situation with the COE.

Also, leads into my next question. As of now, I have not planned for National Weather Service (NWS) staffing at the COE after Saturday, June 25. Do you request to have continued NWS staffing beyond that time? If so, I can start working on a schedule and round up the necessary support. There are also other possibilities to explore. If not in person, the NWS could provide continued NWS support remotely. For example, we could still dial in and participate in the CMT briefing each day, but provide the weather briefing via the phone. Like you, we are staffed and operating 24x7 and could contact the COE EOC when/if threatening weather was approaching endangered levees along the Missouri River valley. If you are not

the right person for me to ask, maybe you could point me in the right direction. And as I said above, if you do still wish to have the one-on-one NWS support, just let me know.

Thanks [REDACTED]

Jim

----- Original Message -----

Subject: Re: FW: Frank Pereira visit to Omaha

Date: Mon, 20 Jun 2011 13:42:31 -0500

From: James Meyer <James.Meyer@noaa.gov> <<mailto:James.Meyer@noaa.gov>>

To: Noreen Schwein <Noreen.Schwein@noaa.gov> <<mailto:Noreen.Schwein@noaa.gov>>

CC: Robert Kelly <Robert.Kelly@noaa.gov> <<mailto:Robert.Kelly@noaa.gov>> , 'Steven Predmore' <Steven.Predmore@noaa.gov> <<mailto:Steven.Predmore@noaa.gov>> , Jim Keeney

<Jim.Keeney@noaa.gov> <<mailto:Jim.Keeney@noaa.gov>> , 'Kim Runk' <Kim.Runk@noaa.gov>

<<mailto:Kim.Runk@noaa.gov>> , 'Thomas Schwein' <Thomas.Schwein@noaa.gov>

<<mailto:Thomas.Schwein@noaa.gov>> , [REDACTED]

[REDACTED] , James Meyer <James.Meyer@noaa.gov>

<<mailto:James.Meyer@noaa.gov>>

Noreen,

I can certainly help point Frank in the right direction, but I think [REDACTED] may be a better person for creating some sort of itinerary - assuming that Frank would be spending the majority of his time in Omaha at the COE to observe how the HPC QPF guidance is being used. If Frank would also like to come out and visit the WFO that would also be fine.

As busy as we are right now I don't think I would attempt to build a formal WFO itinerary but he would certainly get to observe how HPC guidance is used in the WFO and a chance to meet and visit with operational forecasters in a more informal manner. If he flies in on Monday I (and probably [REDACTED]) would want to know how many days he would like to spend at our locations. When you have a little more detail and time allotment on Frank, just let me know and we'll go from there.

Thanks much.

Jim

On 6/20/2011 1:24 PM, Noreen Schwein wrote:

> Bob...that would be great! I got your voicemail, too, and we can see
> about setting up a visit to MBRFC as well. What kind of time frame
> are you looking at as far as when he would be in Omaha and when in KC?

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> Jim...can you help with setting up an itinerary for Frank at the JIC
> and WFO, as well as a little info as to what he can expect at the JIC?
> I assume he would fly in on Monday (Bob can confirm).

>
> Steve...would you all be able to host a visit by HPC forecaster, Frank
> Pereira?

>
> Thanks!

> Noreen

> -----Original Message-----

> From: Robert Kelly [<mailto:Robert.Kelly@noaa.gov>]

> Sent: Monday, June 20, 2011 1:09 PM

> To: Noreen Schwein

> Subject: Frank Pereira visit to Omaha

>
> Noreen,
> We can send Frank next week to Omaha. We need a point of contact and
> some idea of what he should expect.
>
> Bob

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 9:50 AM
To: Farhat, Jody S NWD02
Subject: RE: Snow pack data (UNCLASSIFIED)

Thanks Jody.

[REDACTED]
USACE, Oahe Project
[REDACTED]

-----Original Message-----
From: Farhat, Jody S NWD02
Sent: Tuesday, June 21, 2011 9:47 AM
To: [REDACTED]
Subject: RE: Snow pack data (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

Here's the latest as of June 20:

Above Fort Peck = Peaked at 141% of the normal peak, currently at 61% Fort Peck to Garrison =
Peaked at 136% of the normal peak, currently at 65%

Jody

-----Original Message-----
From: [REDACTED]
Sent: Tuesday, June 21, 2011 9:23 AM
To: Farhat, Jody S NWD02
Subject: Snow pack data

Jody,

Do you have the FP and GA snow pack numbers? I usually include them in the morning brief to the SDEM EOC and have not seen updated numbers since 17 June.

Thanks.

[REDACTED]
USACE, Oahe Project
[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 9:23 AM
To: Farhat, Jody S NWD02
Subject: Snow pack data

Jody,

Do you have the FP and GA snow pack numbers? I usually include them in the morning brief to the SDEM EOC and have not seen updated numbers since 17 June.

Thanks.

[REDACTED]
USACE, Oahe Project
[REDACTED]

[REDACTED]

From: Hogg, Jerry F [JHogg@ameren.com]
Sent: Tuesday, June 21, 2011 9:20 AM
To: Accu-Weather; [REDACTED]; Farhat, Jody S NWD02; [REDACTED]; Hogg, Jerry F; 'Holtz, Jerry'; Stemler, Joan M MVS; [REDACTED]; [REDACTED] DLL-NWK-ED-HC; [REDACTED] NWD02; 'Lobb, Del'; Larry Murphy; NOAA National Weather Service; [REDACTED] - USACE; Parker, Ed; Steve Spaulding; [REDACTED] NWD02; Sullivan, Alan D; [REDACTED] NWD02; Thompson, Phil M; Weather Service Springfield; Witt, Warren A; 'andy_roberts@fws.gov'; 'Bryan_Simmons@fws.gov'
Subject: LOZ Lake Data 2011 yearly form.xls
Attachments: LOZ Lake Data 2011 yearly form.xls

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MO/YR June 2011 PLANT PLANT STATISTICS

Total Inflow (with rain)	Inflow Avg Previous 7 Days 7DA	Prescribed Minimum Flow	Osage Plant Discharge	Midnight Lake Elev.	7:00 AM Lake Elev.	Rain at Osage Plant (in.)	Surface Water Temperature F	Inflow Forecast	Outflow Forecast	Lake Level Forecast
--------------------------------	--------------------------------------	----------------------------	-----------------------------	------------------------	-----------------------	---------------------------------	--------------------------------	--------------------	---------------------	------------------------

DATE

DATE

1	31634	15391	3,848	658.33	658.42	0.00	72	34,000	30,000	658.40
2	33,774	14,501	3,625	658.33	658.43	0.00	72	34,000	30,000	658.50
3	33,235	16,535	4,133	658.39	658.48	0.00	72	34,000	30,000	658.60
4	34,203	20,104	5,026	658.45	658.50	0.00	72	34,000	30,000	658.75
5	33,114	24,066	8,423	658.50	658.60	0.00	81	34,000	30,000	658.85
6	32,922	27,702	9,695	658.66	658.69	0.00	81	32,500	30,000	658.60
7	33,584	30,618	10,716	658.75	658.83	0.00	81	32,500	30,000	658.80
8	33,861	33,209	11,623	658.82	658.80	0.00	81	32,700	32,000	658.80
9	33,192	33,527	11,734	658.65	658.70	0.00	81	32,700	36,500	658.70
10	33,135	33,444	11,705	658.48	658.58	0.00	81	32,700	36,500	658.60
11	32,812	33,430	11,700	658.67	658.54	0.00	81	32,700	30,000	658.70
12	34,107	33,231	11,631	658.86	658.80	0.00	82	32,700	30,000	658.90
13	33,651	33,373	11,680	659.01	659.01	0.43	82	32,700	28,000	659.10
14	34,669	33,477	11,717	659.02	659.10	0.09	82	32,700	32,000	659.20
15	29,568	33,632	23,353	659.01	659.12	0.14	82	30,000	32,000	659.10
16	27,586	33,019	19,811	659.24	659.08	0.00	82	27,000	21,000	659.30
17	18030	32,218	16,109	659.23	659.35	0.00	82	16,000	17,000	659.28
18	8,833	30,060	10,521	659.05	659.19	0.89	82	6,000	10,000	659.25
19	7,806	26,635	9,322	658.93	658.96	0.39	83	6,000	9,000	659.15
20	14,026	22,877	8,007	658.57	658.88	0.00	83	12,000	21,000	658.57
21		20,074	5,018		658.50			15,000	12,000	658.77
22								15,000	12,000	658.87
23								15,000	12,000	
24								12,000	6,000	
25								5,000	5,000	
26								5,000	5,000	
27								5,000	5,000	
28								5,000	5,000	
29								5,000	5,000	
30								5,000	5,000	
1								5,000	5,000	
2								5,000	5,000	
3								5,000	5,000	
4								5,000	5,000	
5								5,000	5,000	
6								5,000	5,000	
7								5,000	5,000	

[REDACTED]

From: [REDACTED]
Sent: Tuesday, June 21, 2011 9:19 AM
To: [REDACTED]
Cc: [REDACTED] RMC; Tasillo, Carol RMC; Bertino, John J Jr NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] POA
D NWD02; [REDACTED]; Farhat, Jody S NWD02; [REDACTED]
Subject: Revised Periodic Inspection Schedule for Omaha District (UNCLASSIFIED)
Attachments: Pisch11.doc

Classification: UNCLASSIFIED
Caveats: NONE

Attached is the updated PI / Modified PA schedule for NWD.

I have revised the schedule to note that the Modified PAs Salt Creek Site 17 (originally 20-23 June) and Gavin Point (originally 25-29 July) will be postponed and restructured as regular Periodic Inspections.

This is due to ongoing flood fighting and dam surveillance at Omaha District. Resources are not currently available to support the modified PAs or to conduct physically inspections during the June and July timeframe.

[REDACTED], please note, our plan is to reschedule and perform PIs for Salt Creek Site 17 and Gavins Point during the fall of 2011, in this calendar year. At this time we do not need a waiver request for exceeding the five year time interval. If schedules slip further (not anticipated), we will send HQ a written waiver request for exceeding the five year cycle for PIs.

Please let me know if you have questions.

Regards,

[REDACTED]
NWD Dam Safety Program Manager

Classification: UNCLASSIFIED
Caveats: NONE

Revised 06/21/2011

DRAFT CENWD PERIODIC INSPECTION ASSIGNMENT WORKSHEET FOR 2011

Project	Date	X-District Reviewer	NWD Attendees
Tuttle Creek* (NWK)	5-7 Oct 10		[REDACTED]
Lower Granite (NWW)	22 March 11	Hart (NWP)	[REDACTED]
Rathbun* (NWK)	21-23 March 11	Worden (F) Sobczyk / Kelly	[REDACTED]
Lost Creek (NWP)	17-18 May 11 (travel 16 May)	Wyrembelski	[REDACTED]
Milford (NWK)	3-5 May 11	tbd	[REDACTED]
Mud Mountain* (NWW)	9-13 May 11	Rajek	[REDACTED]
Lower Monumental (NWW)	01 June 11		[REDACTED]
Big Cliff* & Detroit *(NWP)	PFMA last week of April, PI 24-25 May	F) Werncke, LRL, Hepperman, LRL	[REDACTED]
Salt Creek Sites 17**(NWO)	Postponed to fall 11	Crum (F)	[REDACTED]
Blue River (NWP)	19-20 July 11		[REDACTED]
Howard Hanson (NWS)	11 Aug 11		
Gavins Point** (NWO)	Postponed to fall 11		[REDACTED]
Bear Creek (NWO)	Aug 11		[REDACTED]
Papio Site 11 (NWO)	Sep 11		
Salt Creek Sites 4 (NWO)	31 Aug 11		[REDACTED]
Kanopolis (NWK)	27-30 Sept 11		[REDACTED]
Total # Inspections	17		
xxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxx	xxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxx
Pomme de Terre *(NWK)	Oct 11		
Pomona *(NWK)	Oct 11		

* denotes projects for Modified PAs.

** denotes originally planned for a Modified PA. Revised to a PI and postponed due to flood Page 1

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 8:58 AM
To: [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWO
Cc: Farhat, Jody S NWD02
Subject: RE: (UNCLASSIFIED)
Attachments: NWD Missouri Basin Update - 062111.pptx

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Stages

21 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.8	150 kcfs 20.6	June 19	
B	Pierre	13	19.8	150 kcfs 18.7	June 7	
C	Yankton	20	25.1	150 kcfs n/a	June 14	
D	Sioux City	30	34.0	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	38.6	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	32.2	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	34.4	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	26.8	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	44.0	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	26.1	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	24.6	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	27.6	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	22.8	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

21 June 2011



	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages		Projected Date **	Record Stage (Year)
N	Kansas City	32	26.4	220 kcfs 30	350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.1	220 kcfs 28	350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	21.9	220 kcfs 25	350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	24.8	230 kcfs 27	370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	23.2	235 kcfs 26	370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	26.1	250 kcfs 32	410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	22.1	260 kcfs 27	420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.8	260 kcfs 27	430 kcfs 35	June 19	38.3 (1993)
V	Chamais	17	17.3	290 kcfs 24	450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	24.0	300 kcfs 30	470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.6	300 kcfs 27	470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.1	300 kcfs 23	470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.6	300 kcfs 28	470 kcfs 37	June 20	40.04 (1993)

NWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 8:41 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED]
[REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/21/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/20 Pool Elev: 2251.9 ft-msl

24-hr change: -0.1'

6/20 Ave Inflow: 50,000 cfs

6/20 Ave Release: 61,800 cfs

6/21 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/20 Pool Elev: 1854.2 ft-msl

24-hr change: 0.2'

6/20 Ave Inflow: 188,000 cfs

6/20 Ave Release: 150,200 cfs

6/21 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/20 Pool Elev: 1618.9 ft-msl

24-hr change: 0.3'

6/20 Ave Inflow: 201,000 cfs

6/20 Ave Release: 160,300 cfs

6/21 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/20 Pool Elev: 1419.9 ft-msl

24-hr change: 0.5'

6/20 Ave Inflow: 172,000 cfs

6/20 Ave Release: 158,900 cfs

6/21 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/20 Pool Elev: 1366.3 ft-msl

24-hr change: 1.2'

6/20 Ave Inflow: 200,000 cfs

6/20 Ave Release: 143,500 cfs

6/21 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/20 Pool Elev: 1207.5 ft-msl

24-hr change: -0.1'

6/20 Ave Inflow: 150,000 cfs

6/20 Ave Release: 150,000 cfs

6/21 Scheduled Release: 150,000 cfs

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] IWO

From: [REDACTED] NWD02
Sent: Tuesday, June 21, 2011 8:32 AM
To: Farhat, Jody S NWD02
Subject: FW: Frank Pereira visit to Omaha - future NWS staffing at the COE (UNCLASSIFIED)
Attachments: James_Meyer.vcf

Importance: High

Classification: UNCLASSIFIED

Caveats: NONE

What are your thoughts regarding the HPC person and the NWS (Omaha WFO) person both on-site? Seems like we need one, but not two.

- [REDACTED]

[REDACTED], P.E.
Reservoir Regulation Team Lead
Missouri River Basin Water Management,
Northwestern Division, USACE
[REDACTED]
[REDACTED]

-----Original Message-----

From: James Meyer [<mailto:James.Meyer@noaa.gov>]
Sent: Monday, June 20, 2011 3:18 PM
To: [REDACTED] NWD02
Subject: Frank Pereira visit to Omaha - future NWS staffing at the COE
Importance: High

Hi [REDACTED]

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Thanks [REDACTED].

Jim

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Subject: Re: FW: Frank Pereira visit to Omaha
Date: Mon, 20 Jun 2011 13:42:31 -0500
From: James Meyer <James.Meyer@noaa.gov> <mailto:James.Meyer@noaa.gov>
To: Noreen Schwein <Noreen.Schwein@noaa.gov> <mailto:Noreen.Schwein@noaa.gov>
CC: Robert Kelly <Robert.Kelly@noaa.gov> <mailto:Robert.Kelly@noaa.gov> , 'Steven Predmore' <Steven.Predmore@noaa.gov> <mailto:Steven.Predmore@noaa.gov> , Jim Keeney <Jim.Keeney@noaa.gov> <mailto:Jim.Keeney@noaa.gov> , 'Kim Runk' <Kim.Runk@noaa.gov> <mailto:Kim.Runk@noaa.gov> , 'Thomas Schwein' <Thomas.Schwein@noaa.gov> <mailto:Thomas.Schwein@noaa.gov> , [REDACTED] "WD02" [REDACTED]@usace.army.mil <mailto:[REDACTED]@usace.army.mil> , James Meyer <James.Meyer@noaa.gov> <mailto:James.Meyer@noaa.gov>

Noreen,

I can certainly help point Frank in the right direction, but I think [REDACTED] may be a better person for creating some sort of itinerary - assuming that Frank would be spending the majority of his time in Omaha at the COE to observe how the HPC QPF guidance is being used. If Frank would also like to come out and visit the WFO that would also be fine. As busy as we are right now I don't think I would attempt to build a formal WFO itinerary but he would certainly get to observe how HPC guidance is used in the WFO and a chance to meet and visit with operational forecasters in a more informal manner. If he flies in on Monday I (and probably [REDACTED] would want to know how many days he would like to spend at our locations. When you have a little more detail and time allotment on Frank, just let me know and we'll go from there.
Thanks much.

Jim

On 6/20/2011 1:24 PM, Noreen Schwein wrote:

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> about setting up a visit to MBRFC as well. What kind of time frame
> are you looking at as far as when he would be in Omaha and when in KC?
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> Jim...can you help with setting up an itinerary for Frank at the JIC
> and WFO, as well as a little info as to what he can expect at the JIC?
> I assume he would fly in on Monday (Bob can confirm).
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> Steve...would you all be able to host a visit by HPC forecaster, Frank
> Pereira?
>
> Thanks!
> Noreen
>

> -----Original Message-----

> From: Robert Kelly [mailto:Robert.Kelly@noaa.gov]
> Sent: Monday, June 20, 2011 1:09 PM
> To: Noreen Schwein
> Subject: Frank Pereira visit to Omaha
>

> Noreen,
> We can send Frank next week to Omaha. We need a point of contact and
> some idea of what he should expect.
>
> Bob

[REDACTED] NWO

From: [REDACTED] NWD
Sent: Tuesday, June 21, 2011 7:32 AM
To: McMahon, John R BG NWD; Tipton, Robert A Col NWD; [REDACTED] NWD; Miles,
Steven R COL NWP; Ruch, Robert J COL NWO; Wright, Anthony COL NWS; Hofmann,
Anthony J COL NWK; Caldwell, David A LTC NWW; Acheson, William E LTC NWS; Jordano,
James J LTC NWO; Capps, Stephan A LTC NWP; Evers, Jason A MAJ NWK; Hains, Decker
B LTC NWW; Cenwk-EOC NWK; CENWO-EOC NWO; CENWS-EOC NWS; CENWW-EOC
NWW; CENWP-EOC NWP; [REDACTED] NWD; Anderson, G Witt NWD
Cc: [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED]
NWD; [REDACTED] ULA; Farhat, Jody S NWD02; [REDACTED] WD; [REDACTED]
NWD; [REDACTED] NWD; [REDACTED] Cpt NWD; [REDACTED] NWD; [REDACTED]
[REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED]
[REDACTED] NWP; [REDACTED] ULA@ POD; [REDACTED] NWD; [REDACTED]
[REDACTED] SSG CONTRACTOR @ NWD; [REDACTED] SAW; [REDACTED]
NWD

Subject: FEMA National Situation Report for June 21, 2011 (UNCLASSIFIED)
Attachments: 2011june21fema_natl_sitrep.pdf

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

The operational reports and summary related to flooding and our support to FEMA will be issued in the RCO Evening Report. Only items reported in the Daily FEMA National SITREP are presented.

From FEMA Report (attached):

Missouri River Basin Flooding Summary:

Mandatory Flooding Evacuations - City of Minot, ND (Ward County) Due to heavy rainfall releases from Lake Darling (ND) need to be increased, which may result in severe flooding in the City of Minot (Ward County) and rural areas. Current release levels at Lake Darling are at 9,000 cfs, and this will be increasing to 16,000 - 17,000 cfs on Wednesday, June 22. The high flows in to the Mouse (Souris) River in Minot can be expected to begin by Thursday, June 23. The current reading of the Mouse (Souris) River at 4:00 p.m. CDT on 20 June was 1553.29 feet and the new projected crest, due to the higher releases, is expected to reach 1,563.0 feet on June 26 or 27. This crest will be higher than the 1969 flood (1,555.4 feet) and 7-8 feet higher than the 1881 flood (1,558.0 feet).

A mandatory evacuation has been ordered for all residents in the original evacuation zones. All residents in the original evacuation zones 1-9, need to be out of their homes by 10:00 p.m. CDT on June 22, with the possibility of additional areas being added to this evacuation order. One shelter has opened at the Burlington School. The population of Ward County is 61,675 per 2010 census. No Federal requests have been received as a result of this situation at this time. (JFO Bismarck ND)

Nebraska:

Multiple levees were overtopped this weekend along the Missouri River. On June 19, 2011, Federal Levee - R548, located south of Brownville, NE, overtopped. Water levels at the Brownville gage increased approximately 2 feet in 24 hours and contributed to water going over a 30 foot stretch on the southern portion of the levee system.

Missouri/Nebraska state line:

The Brownville Bridge on US 136 at the Missouri/Nebraska state line is closed due to flooding caused by the overtopped levee (Missouri River). There are closures around Holt County and I-29 on levee unit I-550 located at the Upper Sonora bend of the Missouri River. Interstate 29 remains closed along parts of northwest Missouri and southeast Iowa.

Significant National Weather:

Midwest: A deep low pressure system over the Central Plains will produce widespread precipitation from the Lower Mississippi Valley, across the Central and Northern Plains and the Great Lakes. Moisture from the Gulf of Mexico will flow northward over the Plains and Mississippi Valley and into the Ohio Valley interacting with the cold front extending southward from the low. This will produce showers, thunderstorms and severe thunderstorms (including damaging wind gusts, large hail and tornadoes) from Texas to the Great Lakes. Heavy precipitation (more than 3 inches) will produce Flash Flooding in the Northern Plains (N & S Dakota and northern Nebraska) and Upper Mississippi Valley - exacerbating ongoing flooding.

West: Under high pressure the region will be generally dry. A warming trend will contribute to melt-out of the western snowpack. There will be significant rises on Western rivers and their tributaries.

v/r



Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Tuesday, June 21, 2011 6:42 AM
To: [REDACTED] NWW; Farhat, Jody S NWD02
Subject: Lots of water chamberlain to platte

I'm on the road back to FR from chambetlain. Lots of water in the fields and ditches. Water across hwys 50 and 45. Platte flooded last night.

NWO

From: CENWD-EOC NWD
Sent: Monday, June 20, 2011 11:41 PM
To: CE-UOC HQ02
Cc: [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] LTC NWS; Anderson, G Witt NWD; [REDACTED] HQ@NWD; [REDACTED] NWD; [REDACTED] NWD; Blechinger, Erik T NWO; Caldwell, David A LTC NWW; Capps, Stephan A LTC NWP; CENWD-EOC NWD; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Farhat, Jody S NWD02; [REDACTED] HQ; [REDACTED] HQ02; Hains, Decker B LTC NWW; [REDACTED] NWD; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Jordano, James J LTC NWO; [REDACTED] ULA@SAD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWS; [REDACTED] NWD; [REDACTED] SAW; [REDACTED] A@NWD; McMahon, John R BG NWD; Miles, Steven R COL NWP; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] CELA@NWS; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] Ruch, Robert J COL NWO; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] SWD@SWG; [REDACTED] NWD; Tipton, Robert A Col NWD; [REDACTED] NWD; [REDACTED] ULA@NWW; [REDACTED] HQ02; [REDACTED] M NWD; [REDACTED] COL NWS
Subject: NWD Operation Mighty Mo SITREP- as of 2200 20 June 2011 (UNCLASSIFIED)
Attachments: MR_Levee_Freeboard_062011.pdf; Copy of NWD CT Emergency Tracking 20 Jun 11.xlsx; Flood_Fight_Storyboard_19JUN.pdf; NWD Missouri Basin Update - 062011.pdf; SITREP Levee Pictures_20_Jun_2011.pdf

HQ UOC-

Missouri River Basin Flood Update as of 2200 Monday, 20 June 2011 Pacific Time:

This report covers the operational period from 2130 Sunday, 19 June to 2200 Monday, 20 June 2011 Pacific Time.

A. Update from NWD Missouri River Basin Water Management Office:

1. Posted the updated reservoir forecast today. We continue to watch the rain over the Dakotas, but for now the previously announced peak releases remain unchanged.
2. There were two minor changes to the release schedule: First, Fort Randall releases will be held at 143,000 cfs for one more day before we start stepping it up (this is to manage the Gavins Point pool level). And second, the schedule shows reducing Fort Peck releases to 55,000 cfs late in the forecast period when that reservoir falls below the top of the exclusive zone. At that time, Garrison reservoir is forecast to still be in surcharge, so reducing Fort Peck releases will reduce inflow into Garrison a bit. Releases for the 6 dams are as follows:
3. Fort Peck -Releases were reduced to 60,000 today and will be held at that level as inflows continue to decline.
4. Garrison - releases remain at 150,000 cfs
5. Oahe and Big Bend -Releases from both projects remain at 160,000 cfs today, and will be held at that level.

6. Fort Randall - releases will remain at 143,000 cfs today and tomorrow, gradually stepping up to the peak release of approximately 148,000 cfs with the schedule dependent on the Gavins Point pool level.
 7. Gavins Point - releases remain at 150,000 cfs.
- -----

B. Omaha District Update:

1. Nebraska: Nemaha County, R-562 near Peru, NE - Requested technical assistance for repair work on burrow holes directly above the sheet pile levee. There are limited options for remedial measures but flow is reducing as the water level drops. Flow is clear and the intent is to monitor the area and, if possible, try to find the entrance point on riverward slope as water level drops. Other measures, such as plugging hole at landside slope, could lead to a more detrimental condition. The Sponsor is monitoring the situation and has been provided Bentonite pellets and burlap bags to plug holes on riverward side if they are found. The Sponsor was also instructed to develop a stockpile of sandbags and material to fight if conditions worsen. The Corps will provide technical assistance only.
2. Lake Waconda in Union, NE: A field team responded at 20:30 on June 19 to a request for assistance. The underlying clay layer of the lake had been compromised and was producing multiple boils, up to 24" wide with areas of seepage. The sponsor reported flow under the levee from river to lake. At 1130, 20 June, the team reported that the larger boils have stopped moving material but some of the smaller boils remain active. Sponsor continues to monitor situation.
3. Cass County, Lake Waconda, NE - Technical Assistance request received for assessment of possible seepage from the levee. A technical team was onsite during the evening hours of 19 June and another technical team returned during the daylight on 20 June. The team observed small boils moving material and the larger boils appear to no longer moving material.
4. OVERTOPPED LEVEE: Iowa/Missouri: L550/561-Missouri River LB: The north section of L550 overtopped on 19 June and reportedly continues to overtop in some areas. A field crew is conducting an assessment of the situation from the air. Hwy 136 was closed as a result of the overtopping.
5. OVERTOPPED LEVEE: R548-Missouri River and Little Nemaha: Multiple areas, both north and south of the Cooper Nuclear Station, experienced water levels near the crest and a small section overtopped. One low point on the south section had been overtopped, with a trickle flow over the crest. This area was sandbagged, followed by other low points. Sponsor was given instructions to continue sandbagging and monitor low points.
6. LEVEE IN DANGER OF FULL BREACH: L536/550-Turkey Creek: A private levee along left bank of Mill Creek BREACHED. There is a Federal levee along right bank of Mill Creek which is experiencing significant erosion due to eddies resulting from the left bank breach as reported by sponsor today. A field crew conducted an aerial assessment of the situation with the Sponsor this afternoon. Approximately 400 feet of federal levee tieback on Mills Creek has eroded to approximately the crest of the levee, with a vertical face.

7. Oahe Dam, SD - The relief well road has been closed due to high water (160K flows). No significant dam safety issues. Big Bend Dam, SD - Service road to relief wells is under water (160K flows). No significant dam safety issues.

8. Fort Randall Dam, SD - The repair of concrete slab spalling work by project personnel is ongoing and should be completed tomorrow.

LEVEE MONITORING:

9. Hamburg Levee UPDATE: Water continues to drop with the gage at 913.7 at 0700 this morning. Interstate 29 was dry this morning with no water on the north bound lanes. Segment 3 connection at I-29 shows a high water mark with debris on poly at Segment 3. Crews continuing to work 24/7. The heavy rains were north of the levee site last night, no impacts on the Hamburg AO.

10. UPDATE: Omaha Tribe of Nebraska Access Road project has been terminated.

11. Omaha-Missouri River RB: A seepage area has developed near the state penitentiary and the city is sandbagging the area and will continue to monitor the situation.

12. L624-627/614/611-Mosquito Creek and Upper Pony Creek: A new sinkhole opened adjacent the 28th St. stormwater pumping station. The city used a camera on the pipe below the area, finding a fracture in the pipe and sediment within the pipe. The city is developing remedial measures to put in place.

13. L611/614-MO River LB & Upper Pony Creek Ditch LB: Sponsor called about a suspected slide on a section of the levee. Upon inspection, the issue was classified as a sloughing animal burrow. Sponsor was informed to monitor the situation and contact the Corps if an issue were to arise.

14. L601-Watkins Ditch RB: Boils continue to develop. The boil field has grown to 1.5 miles along the levee. Sponsor is utilizing barrel containment to control boil activity. Corps has recommended they create slots in barrels to allow water to flow out and not to stop all flow. Berm is wet in many areas. Freeboard is as little as one foot in some areas.

15. L594/575-BW,PV, Waubonsie: It continues to be very difficult to contact the sponsor and there is no apparent sponsor maintenance on the levee.

C. Kansas City District:

1. Levees with confirmed breaches:

a. Union Township: Multiple breaches

b. Holt County No. 10: Overtopping breach: Holt 10 had a full overtop breach. Bottom is fully inundated. Secondary containment at Union Township is being overtopped and will not hold long. Conditions are not improving and expect additional overtops in next couple of days. No change in levee status as of this report.

2. NWK's webpage was updated with current flood information and inundation maps and can be found at <http://www.nwk.usace.army.mil/index.cfm>

D. Northwestern Division Update:

1. A data layer for flood fight locations compiled by the Android phone app is now available via the NWD COP Regional Viewer. The layer is available on the Emergency Management tab only:
<https://egis.nwp.usace.army.mil/pls/apex/f?p=200:6>

Look under "Common Operating Picture" >> "Floods 2011" >> "NWD Flood Response Locations"
>> "Missouri (NWK) Flood Fight Locations"

The layer is automatically updated every 30 minutes. Currently, the data covers the Missouri River from Hamburg, Iowa to Kansas City. Query the layer to see pictures or video taken at each location.

2. [FOUO] For those who prefer a PermaLink to the map:

https://egis.nwp.usace.army.mil/pls/apex/cm2.cm2.map?map=NWD_EM&p_MapExt=-96.622009,38.931639,-93.713379,40.649387&p_layers=nwk_gearportal&p_basemap=GEC

3. [FOUO] In order to improve synchronizing our strategic messaging within USACE, we are going to start including an update of Significant Strategic Engagements with this nightly SITREP. The intent, is to ensure HQUSACE has situational awareness of contacts we are making, and the messages we delivered, to ensure synchronization, continuity, and effective of messaging from District through HQUSACE.

NWD Congressional Visits- reference MO River Flooding, scheduled for this week:

a. [FOUO] Wednesday June 22, 2011: Meetings scheduled with Senator Chuck Grassley, Senator Clair McCaskill, Representative Steve King, Representative Rick Berg, Senator Mike Johanns, Senator Kent Conrad, Senator John Thune and Representative Blaine Luetkemeyer.

b. [FOUO] Thursday, June 23, 2011: Senator Roy Blunt, Senator John Hoeven, Senator Jon Tester, Representative Emanuel Cleaver, Senator Tim Johnson, and Representative Kristi Noem.

4. Please contact CENWD-EOC@usace.army.mil or MAJ Raymond Love, NWD Contingency Operations Officer if you have any questions regarding these visits.

5. NWD is not tracking any RFI due to HQUSACE at this time. If there are any outstanding RFI from HQ from NWD, please contact CENWD-EOC@usace.army.mil or MAJ Raymond Love at Raymond.e.love@usace.army.mil . Please do not contact NWO or NWK directly, as they are already heavily engaged with state and local stakeholders, and information flows best when using the chain of command.

E. The links below will help "paint the picture" of the region, and also pre-empt questions and RFI's by providing access to the same real-time data that NWD and its Districts use.

Useful Links:

For current reservoir levels, inflows and releases, visit the Missouri River Basin Water Management website at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

Updated Daily: Details on the reservoirs in the daily bulletin at <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>

Release data for all six reservoirs through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

This ftp site contains an excellent pictorial presentation of the Missouri River Basin system. Please take time to review, as it will help you to better understand the situation and the system we manage.

<ftp://ftp.usace.army.mil/pub/nwd/Mo%20River%20Flooding%206%20June%20update/>

[FOUO] The NWD Common Operating Picture. (Contains National Levy Data base, 1-5 day QPF, Dams, Emergency Management layers, latest critical infrastructure data, etc.)
<https://egis.nwd.usace.army.mil/pls/apex/f?p=200:1:1908605002954834>

[FOUO] For great "pictures from the field" of the flood fight, projects, etc visit the MICA (Mobile Information Collectors Application) website:
<https://gearportal.usace.army.mil/sandboils/listing.html>

Select Omaha Flood Fight - "Show Map in Portal" Button.

To use Google Earth - on the MICA Dashboard hit the button "right click to copy to Network link" with a right click. Select Copy Shortcut option.

Open Google Earth and Right click under my places and select Add - scroll down to add a Network link.

Give it a name and paste the short cut you copied from the MICA dashboard. Google should auto refresh the data on a 5 min interval.

For the most accurate and efficient flow of information, please direct and questions, concerns, or comments to the NWD EOC, or to the undersigned. The NWD RCO Battle rhythm is also attached, and it is the most current as of 20 June 2011.

UOC: please acknowledge Receipt.

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

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Current Stage **NWS 5-Day Forecast Peak**

Gage As of: 10:00
Williston 30.41
Omaha 33.45
Nebraska City 26.50
Brownville 44.13
Rulo 25.83

Freeboard

>5'
2' - 5'
<2'
Breached

6/20/2011 10:00

Missouri River Federal Levee	Stream Gage Location	Likely Range of Stage with normal precipitation (ft)	Overtop Stage Previous Estimate	Overtop Stage FreeBoard Survey	Current FreeBoard (feet)	FreeBoard w/ NWS 5-Day Forecast (feet)
Williston Levee	Williston	30	n/a	32	1.6	1.6
Omaha Levee D/S 275	Omaha	34	40	38	4.6	4.1
Omaha Flood Wall	Omaha	34	41	41	7.6	7.1
Council Bluffs Ind Levee	Omaha	34	n/a	36.8	3.3	2.9
Council Bluffs Fed Levee	Omaha	34	40	40.2	6.8	6.3
L627	Omaha	34	36	38	4.6	4.1
L624	Omaha	34	35	38	4.6	4.1
L611-614	Omaha	34	35	38	4.6	4.1
R616	Omaha	34	35	36.6	3.2	2.7
R613	Omaha	34	35	36.8	3.3	2.9
L601	Nebraska City	27	25.4	29	2.5	2.5
L594	Nebraska City	27	26	30	3.5	3.5
L575	Nebraska City	27	27	27	BREACHED	BREACHED
R573	Nebraska City	27	27	28.2	1.7	1.7
R562	Nebraska City	27	25.5	28.7	2.2	2.2
R548	Brownville	43	44	43.9	2.2	2.2
L550	Brownville	43	42.8	43.7	2.2	2.2
L536	Brownville	43	44.3	43.9	2.2	2.2
R520	Rulo	25.5	27	30	4.2	3.7

*NOTE: FreeBoard survey values may not include all low areas. Overtopping could occur at stages approximately 1 foot below surveyed value.



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 19 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2252.1 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow 50,000 cfs (18 Jun) 67,000 cfs (17 Jun) Daily Avg. Release 65,500 cfs (18 Jun) 65,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 65,000 cfs. - Reservoir will use several feet of surcharge storage above the exclusive flood control pool as spillway gates are raised. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1853.9 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow 169,000 cfs (18 Jun) 148,000 cfs (17 Jun) Daily Avg. Release 150,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates 1854 ft msl River Stage (Bismarck) 18.82 (0815 CDT 19 Jun) - Flood stage – 16 ft 18.71 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1618.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow 156,000 cfs (18 Jun) 156,000 cfs (17 Jun) Daily Avg. Release 153,600 cfs (18 Jun) 150,500 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates 1620 ft msl River Stage (Pierre) 19.11 (0830 CDT 19 Jun) - Flood stage – 15 ft 18.9 (0715 CDT 18 Jun) Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs by mid June. - Reservoir will peak within a foot of the top of the spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1419.5 ft msl 24-hr Change (-0.2 ft) Daily Avg. Inflow 150,000 cfs (18 Jun) 150,000 cfs (17 Jun) Daily Avg. Release 153,000 cfs (18 Jun) 148,600 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs by mid June. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1364.5 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 158,000 cfs (18 Jun) 163,000 cfs (17 Jun) Daily Avg. Release 143,600 cfs (18 Jun) 143,200 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 148,000 cfs by mid to late June. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 148,000 cfs (Mid to late June)	Midnight Elevation 1207.7 ft msl 24-hr Change (10.1 ft) Daily Avg. Inflow 149,000 cfs (18 Jun) 152,000 cfs (17 Jun) Daily Avg. Release 150,100 cfs (18 Jun) 150,300 cfs (17 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 150,000 cfs (Mid June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun, 0900 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Scattered showers and t-storms, showers likely w/ possible t-storms after 3pm. Mostly cloudy, w/ a high near 72. East NE wind around 9 mph. Chance of precip. 70%. Tonight: Showers likely w/ possible t-storms before midnight, scattered showers and t-storms after midnight. Mostly cloudy, w/ a low near 57. North NW wind from 6 to 13 mph. Chance of precip. 70%. Monday: Scattered showers, t-storms also possible after noon. Mostly cloudy, w/ a high near 68. North NW wind from 10 to 15 mph, gusts up to 21 mph. Chance of precip. 50%. 24-hr forecast (Williston, ND) Today: Showers and t-storms likely, mainly after 1pm. Some storms may produce heavy rains. Mostly cloudy, w/ a high near 72. East wind from 10 to 14 mph, gusts up to 20 mph. Chance of precip. 60%. New rainfall amounts from .10 to .25 of an inch, higher amounts possible in t-storms. Tonight: Showers and t-storms. Some storms may produce heavy rains. Low near 59. East wind from 6 to 13 mph. Chance of precip. 90%. New rainfall amounts from .5 to .75 inch possible. Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 8 to 14 mph, gusts up to 18 mph. Chance of precip. 60%. New rainfall amounts from .5 to .75 inch possible.	24-hr forecast (Riverdale, ND) Today: A 50% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 76. SE wind from 14 to 18 mph, gusts up to 25 mph. Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind 14 - 17 mph decreasing to from 6 - 9 mph. Winds could gust as high as 24 mph. Chance of precip. 70%. New rainfall amounts from .75 - 1 inch possible. Monday: A 50% chance of showers and t-storms. Some storms may produce heavy rains. Cloudy, w/ a high near 63. East wind from 14 - 16 mph, gusts up to 23 mph. New rainfall amounts from .5 - .75 inch possible. 24-hr forecast (Washburn, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Some storms may produce heavy rains. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 16 - 20 mph, gusts up to 28 mph. Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 7 - 17 mph, gusts up to 24 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible. Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 63. NE wind from 14 - 17 mph, gusts up to 24 mph. Chance of precip. 60%. New rainfall amounts from .5 - .75 inch possible.	24-hr forecast (Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 77. SE wind from 13 - 17 mph. Chance of precip. 60%. Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 11 mph. Chance of precip. 80%. Monday: Showers and t-storms. High near 69. North NE wind from 10 - 17 mph. Chance of precip. 80%. 24-hr forecast (Ft. Pierre, SD) Today: Showers and t-storms likely, mainly after 4pm. Some storms could be severe and produce heavy rainfall. Partly sunny, w/ a high near 79. SE wind from 13 - 17 mph. Chance of precip. 60%. Tonight: Showers and t-storms. Some storms could be severe and produce heavy rainfall. Low near 59. East NE wind from 6 - 10 mph. Chance of precip. 80%. Monday: Showers and t-storms. High near 70. North NE wind from 10 - 17 mph. Chance of precip. 80%.	24-hr forecast (Lower Brule, SD) Today: A 40% chance of showers and t-storms after 1pm. Some storms could be severe. Partly sunny, w/ a high near 81. SE wind from 14 - 17 mph. Tonight: Showers likely and possibly a t-storm, then showers and t-storms after 7pm. Some storms could be severe and produce heavy rainfall. Low near 62. East wind from 9 - 11 mph. Chance of precip. 80%. Monday: Showers and t-storms. High near 72. NE wind from 9 - 15 mph. Chance of precip. 80%.	24-hr forecast (Chamberlain, SD) Today: A chance of showers and t-storms after 1pm. Partly sunny, w/ a high near 82. SE wind from 11 - 14 mph. Chance of precip. 40%. Tonight: Showers and t-storms. Low near 63. East wind from 6 - 9 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible. Monday: Showers and t-storms. High near 73. NE wind from 7 - 16 mph. Chance of precip. 80%. New rainfall amounts from .75 - 1 inch possible.	24-hr forecast (Yankton, SD) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 83. SE wind from 10 - 13 mph. Chance of precip. 20%. Tonight: Showers and t-storms likely, mainly from 1am - 4am. Mostly cloudy, w/ a low near 67. East wind from 9 - 13 mph. Chance of precip. 60%. New rainfall amounts from .25 - .5 inch possible. Monday: A chance of showers and t-storms. Partly sunny, w/ a high near 82. East NE wind from 8 - 11 mph. Chance of precip. 50%. 24-hr forecast (Sioux City, IA) Today: A slight chance of showers and t-storms after 4pm. Mostly sunny, w/ a high near 84. East SE wind from 9 - 11 mph. Chance of precip. 20%. Tonight: A chance of showers and t-storms, mainly after 7pm. Mostly cloudy, w/ a low near 67. East wind from 10 - 14 mph. Chance of precip. 50%. Monday: A chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 86. East SE wind from 8 - 13 mph. Chance of precip. 40%.



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 19 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: A 40% chance of showers and t-storms, mainly after 1pm. Partly sunny, w/ a high near 77. Breezy, w/ a SE wind from 17 - 21 mph, gusts up to 29 mph. Tonight: Showers and t-storms likely. Some storms may produce heavy rains. Cloudy, w/ a low near 61. East wind from 6 - 16 mph, gusts up to 23 mph. Chance of precip. 70%. New rainfall amounts from .5 - .75 inch possible. Monday: Showers likely and possibly a t-storm. Some storms may produce heavy rains. Cloudy, w/ a high near 64. East wind from 15 - 18 mph, gusts up to 25 mph. Chance of precip. 60%. New rainfall amounts from .75 - 1 inch possible.				24-hr forecast (Omaha, NE) Today: Mostly sunny, w/ a high near 86. SE wind from 8 - 14 mph. Tonight: A 40% chance of showers and t-storms. Some storms could be severe, with large hail and damaging winds. Mostly cloudy, w/ a low near 71. East SE wind from 13 - 16 mph, gusts up to 24 mph. New rainfall amounts from .1 - .25 of an inch, except higher amounts possible in t-storms. Monday: Sunny, w/ a high near 91. South SE wind from 13 - 17 mph, gusts up to 26 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>



Missouri River Flooding (Logistics) (Updated 19 Jun; 0900 CDT)

Personnel Deployed

7 (Glasgow, MT)	5 (Pierre, SD)	16 (Missouri River Survey – 7 teams)
1 (Garrison, ND)	1 (Kansas City, MO)	1 (Lincoln, NE)
4 (Bismarck, ND)	4 (Sioux City, IA)	1 (Offutt, NE)
1 (Fort Yates, ND)	1 (S. Sioux City, NE)	5 (North Platte, NE)
6 (Williston, ND)	1 (Onawa, IA)	6 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4') Issued: 74,270 LF On Hand: 30,200 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,350 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' wide; 500 sq ft)
Pumps Issued: 48 pumps On Hand: 4 pumps (3 – serviceable) Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 pump in maintenance for parts/repair 4 USACE Pumps inbound HESCO: 5,500 LF

Missouri River Basin Stages

20 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.8	150 kcfs 20.6	June 19	
B	Pierre	13	19.3	150 kcfs 18.7	June 7	
C	Yankton	20	25.0	150 kcfs n/a	June 14	
D	Sioux City	30	33.6	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	38.4	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	32.1	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	33.5	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	26.5	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	44.5	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	25.7	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	24.0	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	27.0	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	22.8	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

20 June 2011



	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages		Projected Date **	Record Stage (Year)
N	Kansas City	32	26.4	220 kcfs 30	350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.8	220 kcfs 28	350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	22.2	220 kcfs 25	350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	25.3	230 kcfs 27	370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	23.4	235 kcfs 26	370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	26.1	250 kcfs 32	410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	22.1	260 kcfs 27	420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.4	260 kcfs 27	430 kcfs 35	June 19	38.3 (1993)
V	Chamois	17	17.6	290 kcfs 24	450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	24.0	300 kcfs 30	470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.7	300 kcfs 27	470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.3	300 kcfs 23	470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.8	300 kcfs 28	470 kcfs 37	June 20	40.04 (1993)

NWO

From: Thomas, Kimberly S NWO
Sent: Monday, June 20, 2011 8:47 PM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; [REDACTED] NWO; [REDACTED] HQ02
Subject: Flood Update #96 (UNCLASSIFIED)
Attachments: NWO Flood Fight Materials 19 Jun.xlsx; Day1QPF.gif; Day2QPF.gif; Day3QPF.gif; TempOutlook_20Jun11.xls; Actual_Precip_Reports_062011.xlsx; Observed24HrPrecip.jpg; Missouri River Basin Water Management Situation Report 6-20-11.docx; DailyBulletin_20Jun2011.pdf; MainStemBulletin_20Jun2011.pdf; MR_Levee_Freeboard_062011.pdf; 015.JPG; 023.JPG; 024.JPG; 019.JPG; 022.JPG

Classification: UNCLASSIFIED
Caveats: FOUO

****EMERGENCY OPERATIONS****

1. Situation:

Over the past 24-hours, areas of 0.25 to 0.50 inch rains fell across the Missouri River Basin. Thunderstorms that developed north of the warm front resulted in severe weather and east to west bands of heavy rain that were generally a county across and several counties wide. These bands of rain had 1 to 4 inches of rain in them. There were at least four of these bands especially from Nebraska into Iowa. Other areas of embedded locally heavy rains fell from northeast Colorado into southeast Wyoming, and parts of south central South Dakota. Some of the higher amounts across the Basin included: 4.45 inches near Sidney, Nebraska, 3.32 inches at Missouri Valley, Iowa, 3.15 inches near Scribner, Nebraska, 2.3 inches at Martin, South Dakota, 1.9 inches at Page City, Kansas, and 1.67 inches near Cheyenne. A full summary of actual rainfall amounts is also attached in addition to the 24-hour observed rainfall map.

The overnight weather forecast includes: Unseasonably strong weather systems producing a significant severe weather threat and potential for widespread heavy rains. Widespread heavy rainfall of 1 to 2 inches is forecast from northeast Wyoming into central and western Nebraska and much of central and eastern South Dakota into southwest Minnesota and northwest Iowa. Locally heavy 2+ inch rains will be possible within the widespread rain area along with the thunderstorms that form in eastern Nebraska into western Iowa. In addition to the rain, 3 to 6 inches of snow is forecast for the western Colorado mountains above 10,000 feet.

South Dakota: Fort Randall dam entered the exclusive flood control zone according to the June 19 midnight elevation 1365.10 feet msl.

Oacoma, SD - The State of South Dakota is requesting technical assistance for the City of Oacoma specifically requesting elevations and other technical assistance for a possible levee needed in the area.

Nebraska:

Nemaha County, R-562 near Peru, NE - Requested technical assistance for repair work on burrow holes directly above the sheet pile levee. A flowing hole was discovered just above a section of sheet pile at the pumping plant. The field crew attempted to place plastic on the riverside to slow the flow of water through the levee, which was unsuccessful due to thick vegetation. The hole was initially under approximately 2' of head and flowing clear at a rate of approximately 25 gpm. The flow dropped to approximately 10 gpm. There are limited options for remedial measures but flow is reducing as the water level drops. Flow is clear and the intent is to monitor the area and, if possible, try to find the entrance point on riverward slope as water level drops. Other measures, such as plugging hole at landside slope, could lead to a more detrimental condition. The Sponsor is monitoring the situation and has been

provided Bentonite pellets and burlap bags to plug holes on riverward side if they are found. The Sponsor was also instructed to develop a stockpile of sandbags and material to fight if conditions worsen. The Corps will provide technical assistance only. The sponsor and the levee surveillance team will continue to monitor.

Lake Waconda, Union, NE: A field team responded at 20:30 on June 19 to a request for assistance. The underlying clay layer of the lake had been compromised and was producing multiple boils, up to 24" wide with areas of seepage. The sponsor reported flow under the levee from river to lake. At 1130, 20 June, the team reported that the larger boils have stopped moving material but some of the smaller boils remain active. Sponsor continues to monitor situation.

Iowa/Missouri:

L550/561-Missouri River LB: The north section of L550 overtopped on 19 June and reportedly continues to overtop in some areas. A field crew is conducting an assessment of the situation from the air. Hwy 136 was closed as a result of the overtopping.

R548-Missouri River and Little Nemaha: Multiple areas, both north and south of the Cooper Nuclear Station, experienced water levels near the crest and a small section overtopped. One low point on the south section had been overtopped, with a trickle flow over the crest. This area was sandbagged, followed by other low points. Sponsor was given instructions to continue sandbagging and monitor low points.

L536/550-Turkey Creek: A private levee along left bank of Mill Creek breached. There is a Federal levee along right bank of Mill Creek which is experiencing significant erosion due to eddies resulting from the left bank breach as reported by sponsor on 6-20. A field crew conducted an aerial assessment of the situation with the Sponsor this afternoon. Approximately 400 feet of federal levee tieback on Mills Creek has eroded to approximately the crest of the levee, with a vertical face. The levee is in danger of full breach.

2. Weather:

2.a. Future Precipitation:

The Day 1 QPF (from 700 hours Monday to 700 hours Tuesday): The upper level weather system over Colorado will move into Nebraska and Kansas today and eastern Nebraska by 700 Tuesday. This will result in surface low pressure over north central Kansas moving toward Norfolk with a significant severe weather threat and potential for widespread heavy rains. Widespread heavy rainfall of 1 to 2 inches is forecast from northeast Wyoming into central and western Nebraska and much of central and eastern South Dakota into southwest Minnesota and northwest Iowa. 3 to 6 inches of snow is forecast for the western Colorado mountains above 10,000 feet. There is a moderate risk for severe thunderstorms from eastern Nebraska into western Iowa, south into eastern Kansas and Oklahoma. Isolated tornadoes, very large hail and damaging winds are the primary hazards. There is a heightened risk of EF2 or stronger tornadoes for northeast Nebraska. See attached.

The Day 2 QPF (from 700 hours Tuesday to 700 hours Wednesday): The area of surface low pressure over northeast Nebraska will slowly move to southern Minnesota. As the storm system heads northeast, it will take the rainfall with it. General .25 to .75 inch rains will linger across northeast Nebraska into the central and eastern portions of the Dakotas and northwest Iowa. Northeast parts of the Basin will catch some of the locally heavier 1 to 2 inch rains from the eastern Dakotas into Minnesota and northern Iowa. The bulk of the severe weather threat will have moved out of the Basin area.

The Day 3 QPF (from 700 hours Wednesday to 700 hours Thursday): Strong surface low pressure will continue to lift northeast into the Great Lakes region. The bulk of the Basin will remain dry with some light rains of 0.25 of an inch or less over the northeast portion of the Basin. See attached.

Temperatures: Below normal temperatures (6 to 18 degrees) are expected for much of the Missouri River Basin today and Tuesday with temperatures gradually warmer to near or slightly above normal through the end of the week for most locations. See attached.

Winds Impacting Fort Peck, Williston, Garrison, and Oahe: At Fort Peck, the winds will be from the northwest at 10 to 15 mph with gusts of up to 20 mph this afternoon. At Riverdale, southwesterly winds of 10 to 15 mph will become variable at around 10 mph through Tuesday. At Williston, northerly winds of 10 to 15 mph will continue through Tuesday becoming northeasterly Tuesday afternoon. The winds at Pierre, South Dakota will increase through the day today with sustained northeasterly winds of 15 to 25 mph with gusts approaching 40 mph by this afternoon.

2.b Temperature forecast:

Even stronger northerly winds are forecast for the day Tuesday with sustained winds of 25 to 35 mph with gusts approaching 45 mph during the afternoon.

3. Hydro Status:

3.a. River (Flood Stage/Current Stage/Forecast/Date of Peak: Peak Stage) Montana

- * Yellowstone River at Forsyth/10.0/9.42/receding/
- * Yellowstone River at Miles City/13.0/12.74/receding/
- * Yellowstone River at Glendive/53.5/52.24/receding/
- * Yellowstone River near Sidney/19.0/17.57/cresting/
- * Gallatin River near Logan/8.0/8.04/steady, then rising/Jun 22: 8.4'
- * Missouri River near Toston/10.5/10.36/steady/
- * Missouri River near Wolf Point/13.0/14.11/steady/Jun 20: 14.3'
- * Missouri River near Culbertson/19.0/16.9/steady, then rising/Jun 22: 17.5'
- * Poplar River near Poplar/15.5/12.51/rising/Jun 21: 14.6'
- * Milk River at Nashua/20.0/25.08/cresting/

Wyoming

- * North Platte River at Saratoga/8.5/9.85/steady/
- * North Platte River nr Sinclair/9.0/10.51/steady/
- * Laramie River at Laramie/5.0/5.77/rising/Jun 20: 5.9'

North Dakota

- * Missouri River at Williston/22.0/30.41/steady, then slight recession/
- * Missouri River at Bismarck/16.0/18.81/steady, then rising/Jun 22: 19.0'
- * James River at Jamestown/12.0/11.51 (1,810 cfs)/steady/

South Dakota

- * Missouri River at Pierre/13.0/19.36/steady/
- * Missouri River near Greenwood/30.0/38.04/steady/
- * Missouri River near Gayville/55.0/56.09/steady/

Nebraska

- * North Platte River near Mitchell/7.5/9.7/slight rise/June 21: 9.8'
- * North Platte River at North Platte/6.0/7.37/receding, then rising/June 23: 7.9'
- * Missouri River at Sioux City/30.0/33.6/steady/
- * Missouri River at Decatur/35.0/38.44/steady/
- * Missouri River near Blair/26.5/32.1/steady/

- * Missouri River at Omaha/29.0/33.45/steady/Jun 23: 33.9'
- * Missouri River at NE City/18.0/26.5/steady/
- * Missouri River at Brownville/33.0/44.13/receding/
- * Missouri River at Rulo/17.0/25.83/rising/Jun 23: 26.3'

3.b. Reservoirs:

Tributary Reservoirs:

Pipestem Reservoir, (ND) - fell 0.19' to elevation 1483.12 ft-msl. Inflows are near 170 cfs and releases are 600 cfs. 61.0% of the flood pool is occupied.

Jamestown Reservoir, (ND) - fell 0.20' yesterday to elevation 1443.59 ft-msl. Inflows are approximately 150 cfs and releases are 1,200 cfs. The combined Jamestown/Pipestem release is approximately 1,800 cfs. 37.7% of the flood pool is occupied.

Heart Butte, (ND) - Reservoir fell 0.13 ft yesterday with 4.4% of its flood control pool occupied. Pactola (SD) rose 0.10 ft yesterday with 2.2% of the flood pool occupied. Shadehill (SD) fell 0.04 ft yesterday with 2.5% of the flood pool occupied.

Yellowtail, (MT) - rose 0.30 ft to elevation 3636.78 ft-msl with inflows of 17,124 cfs and releases of 15,383 cfs. 91.7% of its multipurpose pool is occupied.

Tiber, (MT) - rose 0.35 ft to elevation 3005.50 ft-msl. Inflows were 4,506 cfs and releases are 751 cfs as the USBR stores water to help reduce inflows to Fort Peck. 61.3% of its flood pool is occupied.

Clark Canyon, (MT) - rose 0.45 ft to elevation 5550.98 ft-msl with inflows of 1,515 cfs and releases of 289 cfs as the USBR stores water to help reduce inflows to Fort Peck. 32.5% of its flood control pool is occupied.

Canyon Ferry, (MT) - rose 0.56 ft to elevation 3795.49 ft-msl with inflows of 25,791 cfs and releases of 16,163 cfs. 97.4% of its multipurpose pool is occupied.

Glendo, (WY) - rose 0.12 ft to elevation 4638.89 ft-msl with inflows of 8,489 cfs and releases of 7,644 cfs. 18.2% of its flood control pool is occupied.

Missouri River Mainstem Reservoirs: (Water Management SITREP is attached) following is a link to the Mainstem regulation forecast. Refresh to obtain the most recent copy if you keep this link open. <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>. Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/19 Pool Elev: 2252.0 ft-msl

24-hr change: -0.1'

6/19 Ave Inflow: 51,000 cfs

6/19 Ave Release: 65,500 cfs

6/20 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/19 Pool Elev: 1853.9 ft-msl

24-hr change: 0.0'

6/19 Ave Inflow: 165,000 cfs

6/19 Ave Release: 150,200 cfs

6/20 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/19 Pool Elev: 1618.6 ft-msl
24-hr change: 0.1'
6/19 Ave Inflow: 153,000 cfs
6/19 Ave Release: 158,700 cfs
6/20 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/19 Pool Elev: 1419.4 ft-msl
24-hr change: -0.1'
6/19 Ave Inflow: 156,000 cfs
6/19 Ave Release: 158,800 cfs
6/20 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/19 Pool Elev: 1365.1 ft-msl
24-hr change: 0.6'
6/19 Ave Inflow: 171,000 cfs
6/19 Ave Release: 143,600 cfs
6/20 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/19 Pool Elev: 1207.6 ft-msl
24-hr change: -0.1'
6/19 Ave Inflow: 148,000 cfs
6/19 Ave Release: 150,000 cfs
6/20 Scheduled Release: 150,000 cfs

4. Emergency Operations:

4.a.1 Nebraska:

Cass County, Lake Waconda, NE - Technical Assistance request received for assessment of possible seepage from the levee. A technical team was onsite during the evening hours of 19 June and another technical team returned during the daylight on 20 June. The team observed small boils moving material and the larger boils appear to no longer moving material.

4.a.2 Montana:

Ft. Peck Dam, MT - Continuing to monitor scour along the length of the wing wall.

4.a.3 North Dakota:

Williston, ND - Nothing significant to report.

Fort Yates, ND - Standing Rock Sioux Tribe (SRST): North side complete of causeway and South side work is 15% complete. Work has been impeded due to heavy rains this morning.

4.a.4 South Dakota:

Pierre/Ft. Pierre, SD - Increase in tail water surface elevation due to increase discharge (150K to 160K cfs). No other significant issues to report.

Dakota Dunes, SD - Continuing to monitor erosion along South levee, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.

Oahe Dam, SD - The relief well road has been closed due to high water (160K flows). No significant dam safety issues.

Big Bend Dam, SD - Service road to relief wells is under water (160K flows). No significant dam safety issues.

Fort Randall Dam, SD - The repair of concrete slab spalling work by project personnel is ongoing and should be completed 21 June 2011.

Cities of Chamberlin and Oacoma, SD - contacted [REDACTED] (Ft. Randall OPM) who plans to attend a meeting in Oacoma and will stop in Chamberlin. Oacoma has requested technical assistance at this time Chamberlin has not formally requested assistance to date.

4.a.5 Wyoming:
NSTR

4.a.6 Iowa/Missouri:

Mills County: Direct Assistance for L611 Haul roads improvements is complete. Sand/gravel suppliers trucks resumed Sunday night, Layer 1 is being constructed today (10-14 day duration).

Pottawattamie County: [REDACTED] has been assigned to work USACE assistance with Pottawattamie County and Council Bluffs attending a 0730 operations meeting and a 0900 Public Works meeting today to get USACE and CB Public Works efforts unified. The county is looking for an 18" pump, and the Corps will provide manufacture/supplier data.

Hamburg Levee update June 20, 2011: Water continues to drop with the gage at 913.7 at 0700 this morning. Interstate 29 was dry this morning with no water on the north bound lanes. Segment 3 connection at I-29 shows a high water mark with debris on poly at Segment 3. Crews continuing to work 24/7. The heavy rains were north of the levee site last night, no impacts on the Hamburg AO.

Weston crew worked all night continuing to build the berm along Segment 1. Another day or two (of dry weather) is needed to get the berm to the critical location of the active sand boils so the filter sand can be placed. This is the only access to these boils. Remaining poly should be complete into the corner of Segment 1 today as well as any needed ringing of sand boils. Boil activity continues to be problematic, with assistance being requested from the sponsor for ringing efforts from the Corps. Seepage has begun to develop in the I-29 railroad closure structure and is flowing clear with pumps running to counter.

Omaha Tribe of Nebraska Access Road project has been terminated.

Atchison County, MO - The request from the State of Missouri for Atchison County, MO for 20,000 sand bags and a sand bag filling machine to be delivered to Rockport, MO will be worked through the Kansas City District USACE.

4.a.7 Missouri River Levee Surveillance:

Multiple teams comprised of Omaha District and out-of-District staffs continue to coordinate with local sponsors on any issues/concerns they may have, as well as conduct surveillance on levee conditions. Seepage areas/boils have been observed along the levees. Teams have been providing assistance to Sponsors when seepage areas/boils and other actionable items are observed.

Omaha-Missouri River RB: A seepage area has developed near the state penitentiary and the city is sandbagging the area and will continue to monitor the situation.

L624-627/614/611-Mosquito Creek and Upper Pony Creek: A new sinkhole opened adjacent the 28th St. stormwater pumping station. The city used a camera on the pipe below the area, finding a fracture in the pipe and sediment within the pipe. The city is developing remedial measures to put in place.

L611/614-MO River LB & Upper Pony Creek Ditch LB: Sponsor called about a suspected slide on a section of the levee. Upon inspection, the issue was classified as a sloughing animal burrow. Sponsor was informed to monitor the situation and contact the Corps if an issue were to arise.

L601-Watkins Ditch RB: Boils continue to develop. The boil field has grown to 1.5 miles along the levee. Sponsor is utilizing barrel containment to control boil activity. Corps has recommended they create slots in barrels to allow water to flow out and not to stop all flow. Berm is wet in many areas. Freeboard is as little as one foot in some areas.

L594/575-BW,PV, Waubonsie: It continues to be very difficult to contact the sponsor and there is no apparent sponsor maintenance on the levee.

L575-BW,McKissock, Buchanan, Atchison, Hamburg: Burrows, ranging from small to large, were identified, flagged, and reported to the sponsor by field crews and the Sponsors were instructed to treat the burrow holes with Bentonite.

Hamburg, IA has requested National Guard assistance

4.b Equipment:

Sandbags

Issued: 14,637,000

On Hand: 6,923,500

Projected: 6,500,000

HESCO 3'

Issued: 8,200 LF

On Hand: 9,000 LF

Projected: 10,000 LF

HESCO 4'

Issued: 66,070 LF

On Hand: 21,950 LF

Projected: 25,000 LF

Poly Rolls

Issued: 2,836 rolls

On Hand: 1,987 rolls

Projected: 1,500 rolls

Pumps

Issued: 48

On Hand: 5

Serviceable: 4

Projected: 20

Additional Supplies due in:

Pumps: 1 pump waiting on PTO Shaft (MRPO tech).

Sling Bags: 1,225 ea. 2,000 lb w/slugs on-hand.

Heavy Bags: 6,420 ea. (35x35x35) on-hand now.

HESCO 4': 4,750 LF ETA 20 June.

GeoTextile: 4 rolls (16' x 500') on-hand.

4.c Funding:

* Total Code 200 Funding received to date for this event: \$47,412,425

* Total Code 200 Funding waiting to be received for this event: \$0

* Total Code 200 Funding revoked to date for this event: \$3,834,000

* Class 219 - Emergency Operations - Direct Assistance - \$250,000 - WAD and FAD received 3/14/2011

* Class 219 - Emergency Operations - Direct Assistance - \$3.825M - WAD received 03/15/11. FAD received 03/16/11.

* Class 219 - Additional Funds Request on 24 March - \$231,425 - WAD and FAD received 03/24/11.

* Class 219 - Emergency Operations - Direct Assistance - \$2.5M revoked - 4/13/11

* Class 219 - Emergency Operations - Direct Assistance - \$100k revoked - 4/22/11

- * Class 210 - Response Operations - Alabama Tornadoes - \$56k - MIPR - 4/30/11 - received \$45k on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$25k - Request and received for EOC Operations and deployments on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$14k revoked - 05/02/2011
- * Class 210 - Response Operations - Alabama Tornadoes - \$10k revoked - 05/03/2011
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - WAD and FAD received on 05/25/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - WAD and FAD received on 05/26/11
- * Class 200 - Emergency Operations - Response Operations - \$5,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/27/11 - WAD received for \$2M received on 05/31/11 - verbal received on 06/04/11 for \$1M
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - request sent 05/28/11 - WAD received on received 05/28/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/31/11 - WAD received 06/01/11
- * Class 200 - Emergency Operations - Response Operations - \$6,500,000 - request sent 06/01/11 - WAD for \$3M received 06/02/011 - verbal received on 06/04/11 for \$3.5M
- * Class 200 - Emergency Operations - Response Operations - \$1,500,000 - request sent 06/03/11 - verbal received 06/03/11
- * Class 200 - Emergency Operations - Response Operations - \$1,000,000 - request sent 06/03/11 - verbal received 06/03/11 - WAD received 06/06/11
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - request sent 06/04/11 - verbal received 06/04/11
- * Class 200 - Emergency Operations - Response Operations - \$2,000,000 - request sent 06/05/11 - verbal received 06/05/11
- * Class 200 - Emergency Operations - Response Operations - \$400,000 - request sent 06/06/11 - verbal received 06/07/11
- * Class 200 - Emergency Operations - Response Operations - \$50,000 - received 06/08/11
- * Class 200 - Emergency Operations - Response Operations - \$980,000 - request sent 06/08/11 - WAD received 06/09/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/09/11 - WAD received 06/10/11
- * Class 21M - Emergency Operations - Response Operations - \$210k revoke request sent 06/10/11
- * Class 21M - Emergency Operations - Response Operations - \$1,000,000 revoke request sent 06/17/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/17/11 - verbal received 06/18/11

- * Total Code 500 Funding received to date: \$827,904
- * Class 520 Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/2/11.
- * Class 52A Additional Request for Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/10/11.
- * Class 520 Additional Request for Funding - Advance Measures - Technical assistance - \$101,640. WAD and FAD received on 3/24/11.
- * Class 519 Funding - Advance Measures - Direct Assistance - \$376,264. WAD and FAD received on 3/28/11.
- * Class 520 Funding - Advance Measures - Technical assistance - \$110k - FAD received on 05/12/11.
- * Class 510 Funding - Advance Measures - Direct assistance - \$40k - FAD received on 05/26/11

Daily Labor Burn Rate: \$137,500
Daily Contract Burn Rate: \$280,000
Combined Daily Burn Rate: \$417,500

4.d Number of Personnel Supporting EOC Operations:

Working in field: 53
Working in District: 50
Outside District: 1

5.a EOC Activation - Level IV - 24 hour Activation (Shifts: 0700-1930)

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED
Caveats: FOUO

163019JUN11

	SANDBAGS	3' HESCO	4' HESCO	POLY ROLLS	PUMPS
ISSUED:	14,637,000	8,200	66,070	2,836	48
ON HAND:	6,923,500	9,000	21,950	1,987	4 / 5
PROJECTED REQTS:	6,500,000	10,000 LF	25,000 LF	1,500 rolls	20

Serviceable / On Hand

Notes

1. Pumps: 1 pump waiting on PTO Shaft (MRPO tech).
2. Slingbags: 1,225ea 2,000 lb w/ slings on-hand.
3. Heavybags: 6,420ea (35x35x35) on-hand now.
4. HESCO: 4,750 LF ETA 20 June.
5. GeoTextile: 4 rolls (16' x 500') on hand

7 Day Temperature Forecasts (High/Low)						
20-Jun-11						
Location	Mon	Tue	Wed	Thu	Fri	Sat
	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
Helena, MT	71/46	77/49	82/51	74/49	68/46	70/48
Livingston, MT	68/43	76/44	82/48	81/50	76/48	76/49
Billings, MT	72/49	78/49	84/55	86/57	84/56	83/57
West Yellowstone, MT	63/34	70/36	74/39	74/40	68/38	67/37
Cody, WY	66/48	74/49	78/51	80/53	77/49	77/49
Sheridan, WY	68/47	74/47	78/50	82/53	79/51	78/52
Casper, WY	64/47	74/47	81/48	85/52	84/51	84/49
Laramie, WY	57/40	69/42	75/45	78/43	80/43	82/41

Sun	Norm
26-Jun	Max/Min
73/NA	77/48
78/NA	77/47
86/NA	82/53
68/NA	NA/NA
81/NA	78/50
82/NA	80/49
86/NA	82/49
80/NA	75/44

<u>Date</u>	<u>Time</u>	<u>Station Number</u>	<u>Station Name</u>	<u>Total Precip</u> <u>.ins</u>	<u>New Snow</u> <u>.in</u>	<u>Total Snow</u> <u>.in</u>	<u>St</u>
6/20/2011	7:00 AM	MO-FSA-197	Lancaster 0.2 SE	1.36	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-199	Memphis 0.1 S	1.23	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-171	Unionville 0.8 W	1.00	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-201	Lambert 0.8 ESE	0.93	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-041	Keytesville 0.3 E	0.85	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-095	Blue Springs 0.9 NW	0.83	NA	NA	MO
6/20/2011	7:00 AM	MO-ND-6	Hopkins 3.9 WSW	0.82	0.0	0.0	MO
6/20/2011	7:00 AM	MO-FSA-045	Kahoka 0.6 S	0.80	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-111	Monticello 0.4 SSW	0.78	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-121	Macon 1.5 N	0.72	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-081	Bethany 1.3 NE	0.62	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-103	Edina 2.3 E	0.60	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-129	Princeton 1.4 NNE	0.57	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-211	Milan 1.2 SW	0.53	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-017	Marble Hill 0.4 NE	0.50	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-135	California 0.3 SW	0.46	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-087	Mound City 0.2 WNW	0.45	NA	NA	MO
6/20/2011	7:00 AM	MO-LN-6	Brookfield 0.5 ESE	0.40	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-115	Brookfield 1.2 WSW	0.33	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-117	Chillicothe 2.9 E	0.31	NA	NA	MO
6/20/2011	7:00 AM	MO-FSA-001	Kirksville 1.4 S	0.28	NA	NA	MO

MAX/MIN TEMPERATURE AND PRECIPITATION TABLE FOR
NORTHEAST KANSAS...AND NORTHWEST AND NORTHCENTRAL MISSOURI
NATIONAL WEATHER SERVICE KANSAS CITY/PLEASANT HILL MO
935 AM CDT MON JUN 20 2011

OFFICIAL AIRPORT REPORTING STATIONS

VALUES REPRESENT YESTERDAY'S HIGHS...MORNING LOWS THROUGH 7 AM
AND PRECIPITATION OVER THE PAST 24 HOURS ENDING AT 7 AM.

PRECIPITATION...SNOWFALL AND SNOW DEPTH ARE IN INCHES.

.BR EAX 0620 C DH01/TAIRZX/DH07/TAIRZP/PPDRZZ/SFDRZZ/SDIRZZ

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:.....
:      STATION          | MAX | MIN | 24-HR | SNOW | SNOW
:      NAME            | TMP | TMP | PRECIP | FALL | DEPTH
:.....
:
MCI : KANSAS CITY INTL : 88 / 79 / 0.00 / 0.0 / 0
STJ : ST JOSEPH       : 87 / 78 / 0.00 / 0.0 / 0
MKC : KANSAS CITY DWTN : 90 / 80 / 0.00 /    /
OJC : JOHNSON CO EXEC  : 89 / 78 / 0.00 /    /

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IXD : OLATHE NEW CENT : 91 / 80 / 0.00 / /
 CDJ : CHILLICOTHE : 86 / 71 / 0.15 / /
 IRK : KIRKSVILLE : 85 / 67 / 0.21 / /
 DMO : SEDALIA : 90 / 79 / 0.00 / /
 LXT : LEE'S SUMMIT : 89 / 77 / 0.00 / /

:
 .END

.BR EAX 0620 C DH07/TAIRZX/TAIRZN/PPDRZZ/SFDRZZ/SDIRZZ
 :COOPERATIVE OBSERVATIONS
 :VALUES ARE FOR THE PREVIOUS 24 HOURS ENDING AT 7 AM

STATION	OBS	MAX	MIN	24-HR	SNOW	SNOW
NAME	TIME	TMP	TMP	PRECIP	FALL	DEPTH

:IN EXTREME EASTERN KANSAS...

ATHK1:ATCHISON	:DH0700/	/	/	0.00	/	/
ATSK1:ATCHISON 1S	:DH0730/	87	65	0.00	/	/
BASK1:BASEHOR 3NE	:DH0650/	90	66	0.00	/	/
BNRK1:BONNER SPRINGS	:DH0700/	89	67	0.00	0.0	0
HILK1:HILLSDALE LAKE	:DH0700/	91	70	0.00	/	/
LVNK1:LEAVENWORTH	:DH0700/	88	69	0.00	0.0	/
OSAK1:OSAWATOMIE	:DH0700/	91	68	0.00	/	/
OPSK1:OVRDND PK S OF 87TH	:DH0700/	/	/	0.00	0.0	0

STATION	OBS	MAX	MIN	24-HR	SNOW	SNOW
NAME	TIME	TMP	TMP	PRECIP	FALL	DEPTH

:IN NORTHWEST MISSOURI...

ALAM7:ALBANY	:DH0750/	89	69	T	0.0	0
ABAM7:ALBANY 2W	:DH0700/	/	/	0.01	/	/
AMTM7:AMITY 4NE	:DH0643/	87	67	0.07	0.0	0
BEYM7:BETHANY	:DH0500/	86	67	0.04	0.0	0
BOCM7:BOLCKOW 1W	:DH0700/	/	/	0.02	/	/
BRJM7:BURLINGTON JUNCTION	:DH0700/	/	/	0.25	/	/
CAMM7:CAMERON	:DH0700/	/	/	0.26	0.0	0
CNSM7:CAINSVILLE	:DH0700/	/	/	0.13	/	/
CSBM7:COSEBY 2W	:DH0700/	85	67	0.00	/	/
JMEM7:JAMESON	:DH0700/	/	/	0.10	/	/
GRTM7:GRANT CITY 5WSW	:DH0800/	83	65	0.16	/	/
HMLM7:HAMILTON 2W	:DH0700/	86	66	0.00	/	/
HOPM7:HOPKINS	:DH0700/	/	/	0.52	/	/

MYVM7:MARYVILLE 2E	:DH0700/	86	/	67	/	0.08	/	/
MYLM7:MARYVILLE 1E	:DH0700/	/	/	/	/	0.08	/	/
PTTM7:PATTONSBURG	:DH0700/	/	/	/	/	0.14	/	/
POLM7:POLO	:DH0700/	85	/	67	/	0.00	/	0.0 / 0
RWYM7:RIDGEWAY	:DH0700/	/	/	/	/	0.16	/	/
SAVM7:SAVANNAH 1S	:DH0700/	/	/	/	/	0.00	/	/
TAKM7:TARKIO	:DH0640/	87	/	68	/	0.03	/	0.0 / 0

:

STATION	OBS	MAX	MIN	24-HR	SNOW	SNOW
NAME	TIME	TMP	TMP	PRECIP	FALL	DEPTH

.....

:

:IN NORTH-CENTRAL MISSOURI...

:

ATAM7:ATLANTA	:DH0700/	/	/	0.06	/	/
BHCM7:EXCELLO 3SW	:DH0700/	/	/	0.03	/	/
BRKM7:BROOKFIELD	:DH0701/	86	/	67	/	0.36 /
BRWM7:BROWNING 2NE	:DH0700/	/	/	0.23	/	/
CHLM7:CHILLICOTHE 2S	:DH0904/	88	/	69	/	0.18 / 0.0 / 0
CLMM7:COLOMA	:DH0700/	/	/	0.40	/	/
CHUM7:CHULA 5SE	:DH0700/	/	/	0.31	/	/
DOWM7:DOWNING	:DH0700/	84	/	65	/	1.75 / 0.0 / 0
GRCM7:GREEN CITY	:DH0700/	85	/	65	/	0.17 / 0.0 / 0
HNZM7:HUNTSVILLE 2NW	:DH0700/	/	/	0.01	/	/
KRKM7:KIRKSVILLE	:DH0700/	86	/	66	/	0.34 /
LACM7:LANCASTER 2SE	:DH0746/	/	/	1.28	/	0.0 / 0
VDIM7:LANCASTER 4NNE	:DH0700/	/	/	1.77	/	/
LDOM7:LAREDO 1E	:DH0700/	/	/	0.29	/	/
LNSM7:LINNEUS 3NW	:DH0700/	/	/	0.09	/	/
LVZM7:LIVONIA	:DH0700/	/	/	1.20	/	/
LBRM7:LONG BRANCH RES.	:DH0800/	86	/	67	/	0.15 /
LBZM7:MACON	:DH0700/	/	/	0.14	/	/
LCRM7:LUCERNE	:DH0700/	/	/	0.17	/	/
MNDM7:MENDON	:DH0700/	/	/	0.07	/	/
NVZM7:NOVINGER	:DH0700/	/	/	0.19	/	/
PRTM7:PRINCETON	:DH0850/	87	/	67	/	0.13 / 0.0 / 0
PSPM7:MEADVILLE 5SE	:DH0700/	/	/	0.09	/	/
SPKM7:SPICKARD 7W	:DH0700/	86	/	66	/	0.05 / 0.0 / 0
TTNM7:TRENTON	:DH0700/	88	/	68	/	0.20 /
UNVM7:UNIONVILLE	:DH0700/	85	/	64	/	0.73 / 0.0 / 0

:

STATION	OBS	MAX	MIN	24-HR	SNOW	SNOW
NAME	TIME	TMP	TMP	PRECIP	FALL	DEPTH

.....

:

:IN WEST-CENTRAL MISSOURI...

:

BLKM7:BLUE LICK	:DH0700/	/	/	0.00	/	/	
BUTM7:BUTLER	:DH0744/	91	/	69	/	0.00	/ 0.0 / 0
CRLM7:CARROLLTON	:DH0700/	88	/	69	/	0.02	/ /
CLNM7:CLINTON	:DH0700/	92	/	71	/	0.02	/ 0.0 / 0
DRXM7:DREXEL	:DH0658/	/	/	0.00	/	/	
ELMM7:ELM	:DH0700/	89	/	68	/	0.00	/ /
EXSM7:EXCELSIOR SPRGS 4S	:DH0700/	/	/	0.26	/	/	
GEEM7:GREEN RIDGE 3SW	:DH0600/	/	/	0.02	/	/	
HRRM7:HARRISONVILLE	:DH0700/	/	/	0.00	/	/	
HIGM7:HIGGINSVILLE	:DH0800/	88	/	69	/	0.00	/ /
IPDM7:INDEPENDENCE	:DH0630/	88	/	67	/	0.00	/ /
KRNM7:KEARNEY 3E	:DH0600/	89	/	67	/	0.02	/ /
LSSM7:LEES SUMMIT 2SE	:DH0530/	/	/	0.01	/	0.0	/ 0
LXGM7:LEXINGTON 2SSW	:DH0730/	86	/	68	/	0.00	/ /
VMSM7:MIAMI 4SW	:DH0700/	/	/	0.06	/	/	
MRHM7:MARSHALL	:DH0700/	89	/	68	/	0.00	/ /
PTCM7:PLATTE CITY 2SSE	:DH0700/	/	/	0.00	/	0.0	/ 0
PLHM7:PLEASANT HILL	:DH0658/	90	/	66	/	0.00	/ 0.0 / 0
RAMM7:RAYMORE	:DH0700/	91	/	67	/	0.00	/ /
RCMM7:RICHMOND 3S	:DH0658/	89	/	69	/	T	/ 0.0 / 0
SDLM7:SEDALIA COOP	:DH0700/	88	/	70	/	0.00	/ /
SLKM7:SMITHVILLE LAKE	:DH0845/	85	/	71	/	0.00	/ /
SSPM7:SWEET SPRINGS	:DH0803/	90	/	68	/	0.00	/ /
UVAM7:UNITY VILLAGE 3ESE	:DH0700/	89	/	66	/	0.00	/ / 0
UIHM7:URICH 2SW	:DH0729/	/	/	0.00	/	0.0	/ 0
VALM7:VALLEY CITY	:DH0700/	/	/	0.00	/	0.0	/ 0
WRRM7:WARRENSBURG 4NW	:DH0800/	89	/	70	/	0.00	/ 0.0 / 0
SZL :WHITEMAN AFB	:DH0655/	89	/	68	/	0.00	/ /
WNSM7:WINDSOR	:DH0700/	89	/	68	/	0.00	/ /

:

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: STATION	OBS	MAX	MIN	24-HR	SNOW	SNOW
: NAME	TIME	TMP	TMP	PRECIP	FALL	DEPTH

.....

:

:IN CENTRAL MISSOURI...

:

BNLM7:BOONVILLE 4SW	:DH0700/	89	/	67	/	0.00	/ /
BRCM7:BRUNSWICK	:DH0700/	88	/	68	/	0.07	/ 0.0 / 0
WIXM7:MOBERLY	:DH0800/	86	/	69	/	0.02	/ /
NWFM7:NEW FRANKLIN 1W	:DH0800/	88	/	69	/	0.00	/ /
OTTM7:OTTERVILLE 1E	:DH0700/	/	/	0.01	/	/	
SBYM7:SALISBURY	:DH0644/	87	/	68	/	0.10	/ 0.0 / 0

.END

ate	County	View
0	Schuyler	
0	Scotland	
0	Putnam	
0	Scott	
0	Chariton	
0	Jackson	
0	Nodaway	
0	Clark	
0	Lewis	
0	Macon	
0	Harrison	
0	Knox	
0	Mercer	
0	Sullivan	
0	Bollinger	
0	Moniteau	
0	Holt	
0	Linn	
0	Linn	
0	Livingston	
0	Adair	

Missouri River Basin Water Management Situation Report – 6-20-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck passing its spillway crest (continuing up on raised spillway gates) and the other two being near their spillway crests. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Fort Peck and Garrison Reservoirs will likely continue. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULLOMR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/20/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	51.0	65.5	2250	2252.0	-0.1
Garrison	165.0	150.2	1854	1853.9	0.0
Oahe	153.0	158.7	1620	1618.6	0.1
Big Bend	156.0	158.8	1423	1419.4	-0.1
Fort Randall	171.0	143.6	1375	1365.1	0.6
Gavins Point	148.0	150.0	1210	1207.6	-0.1

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and will be going into surcharge over the next week and a half. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. As of today, the stored water has slightly entered the exclusive flood control zone of Fort Randall, but not of Big Bend and Gavins Point where 100 percent of their exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/20/11)

Reservoir	Current	Total	Remaining	Exclusive	% Excl Left
	kAF	kAF	kAF	kAF	
Fort Peck	18,965	18,463	-502	971	-52
Garrison	23,794	23,821	27	1,489	2
Oahe	22,611	23,137	526	1,102	48
Big Bend	1,588	1,798	210	60	100
Fort Randall	4,442	5,418	976	985	99
Gavins Point	381	450	69	57	100

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Fort Peck will be reduced to 60,000 cfs beginning today as inflows continue to decline. The other reservoir releases are currently being maintained at their anticipated maximum releases. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/20/11)

Reservoir	Yesterday	Forecast	7 days out	14 days out	Pre-2011
	kcfs	Today	27 June	04 July	Record
	kcfs	kcfs	kcfs	kcfs	kcfs
Fort Peck	65.5	60	60	60	35
Garrison	150.2	150	150	150	65
Oahe	158.7	160	160	160	59
Big Bend	158.8	160	160	160	74
Fort Randall	143.6	143	148	148	67
Gavins Point	150.0	150	150	150	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/20/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.8	20.6	mid-Jun
Pierre, SD	13	19.3	18.7	mid-Jun
Sioux City, IA	30	33.6	35-37	mid-Jun thru July
Decatur, NE	35	38.4	40-42	mid-Jun thru July
Omaha, NE	29	33.5	34-36	mid-Jun thru July
Nebraska City, NE	18	26.5	27-28+	mid-Jun thru July
St. Joseph, MO	17	24.0	27-32	mid-Jun thru July
Kansas City, MO	32	26.4	30-39	mid-Jun thru July
Waverly, MO	20	25.3	27-31	mid-Jun thru July
Boonville, MO	21	22.1	27-33	mid-Jun thru July
Hermann, MO	21	21.7	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases have reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still about 3 feet below the constructed levee crests.

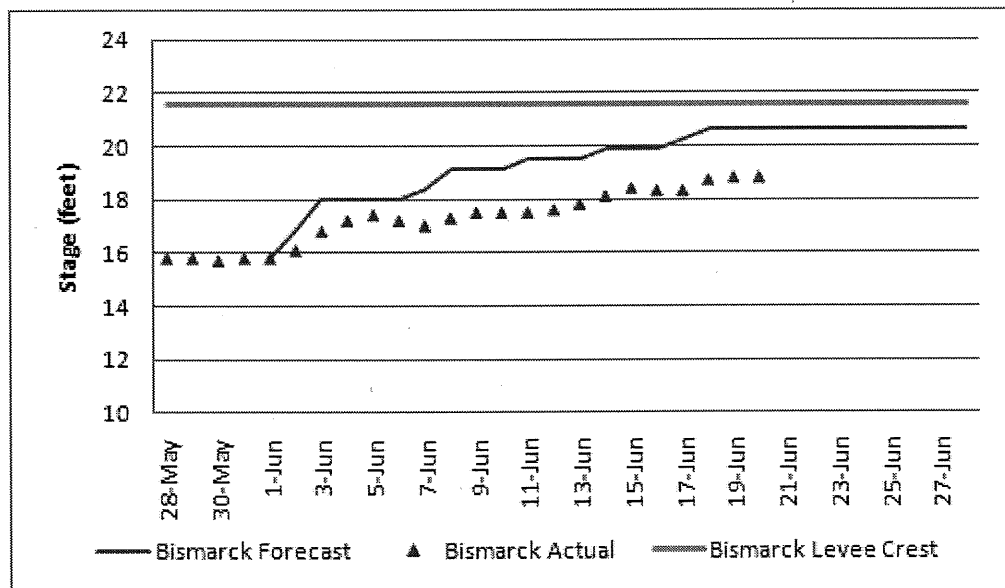


Figure 1. Missouri River stages at Bismarck, North Dakota.

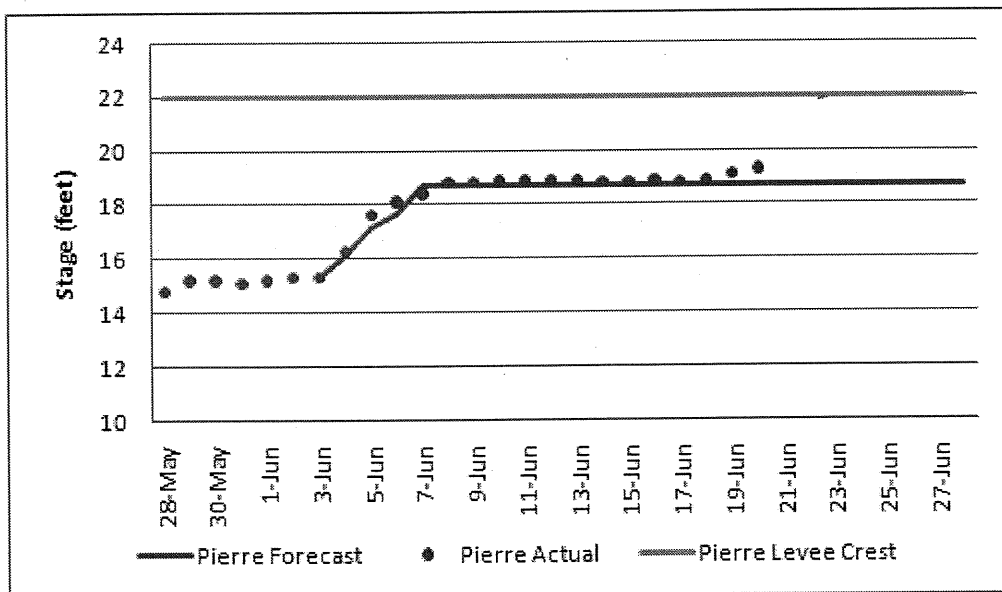


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast has not yet been prepared today; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Inflows from the heavier forecasted areas would drain into all reservoirs in the System except Fort Peck. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 17 mountain snowpack update by the Corps.

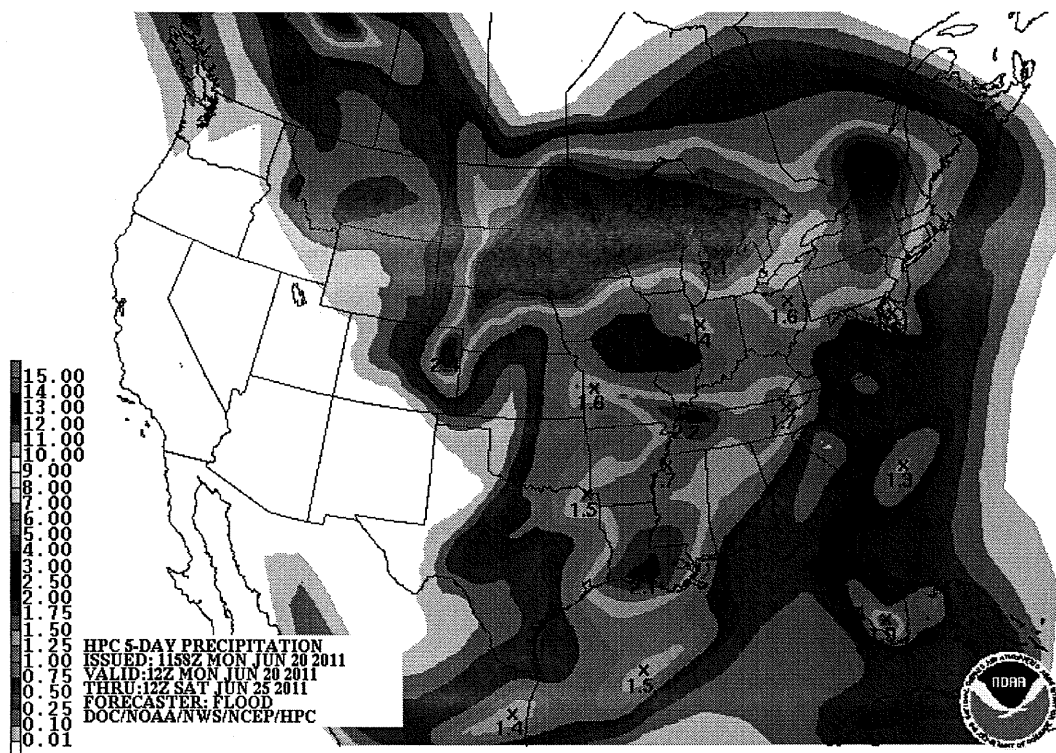


Figure 3. 5-day total QPF ending 0700 Saturday, June 25, 2011.

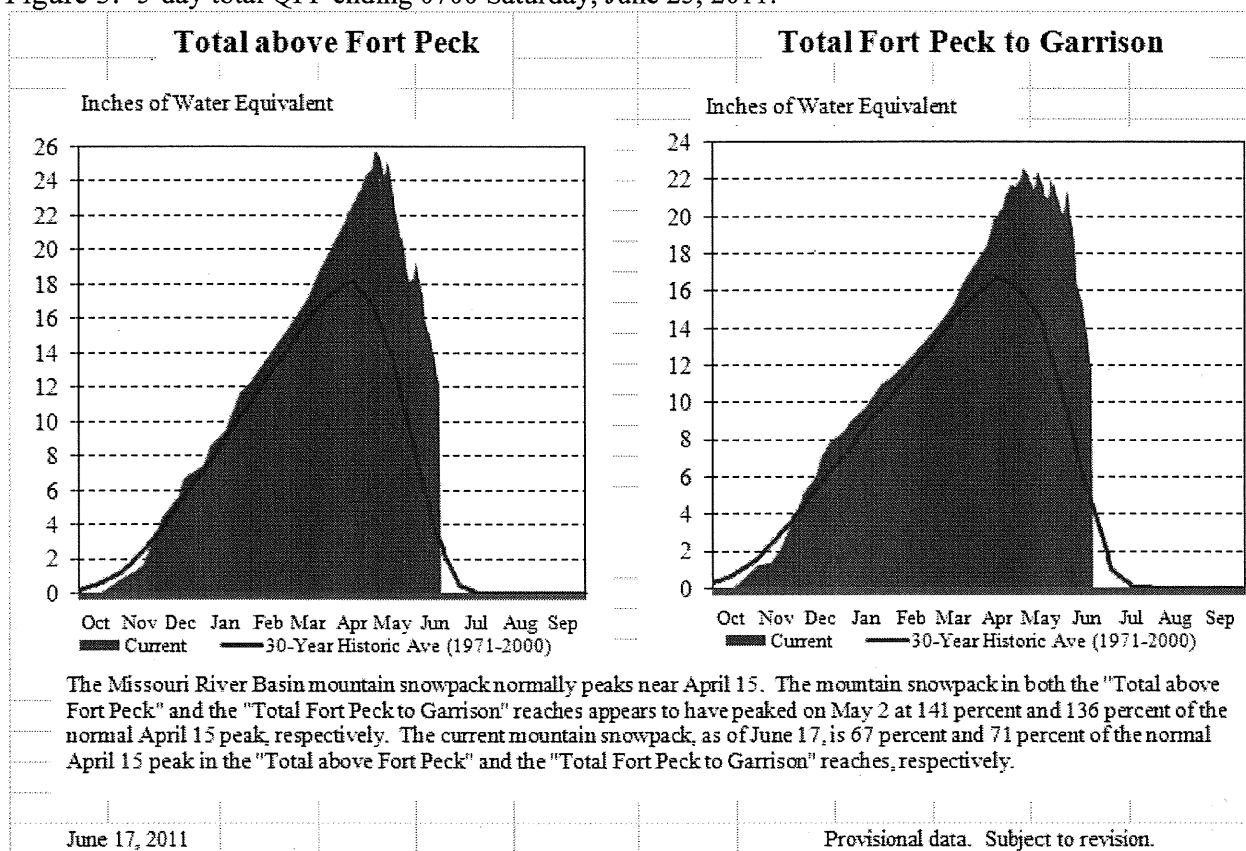


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 17, 2011.

Current Actions and Notable Information

Levee construction been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

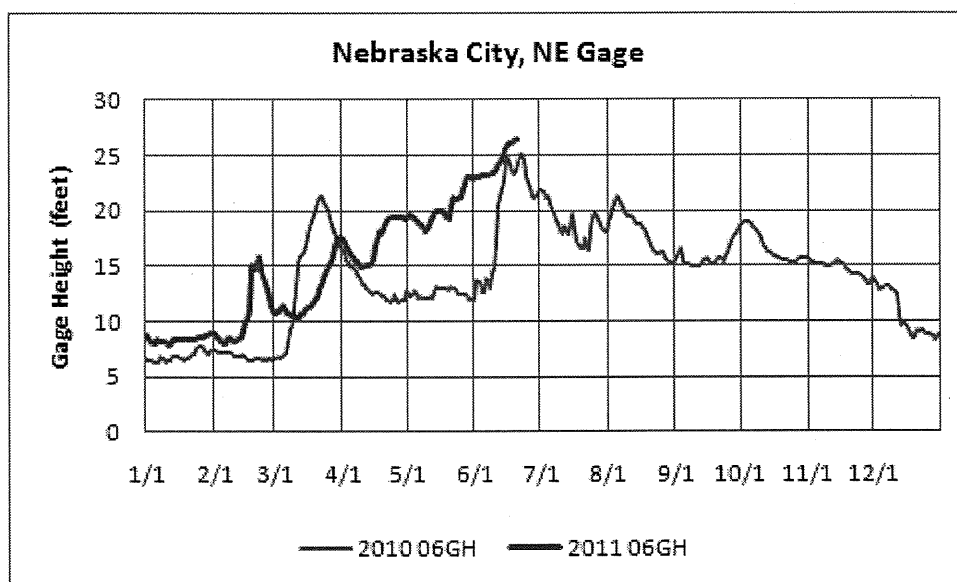


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

Yesterday, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

Additionally, levee R-548, located south of Brownville in Nemaha County, Nebraska overtopped yesterday.

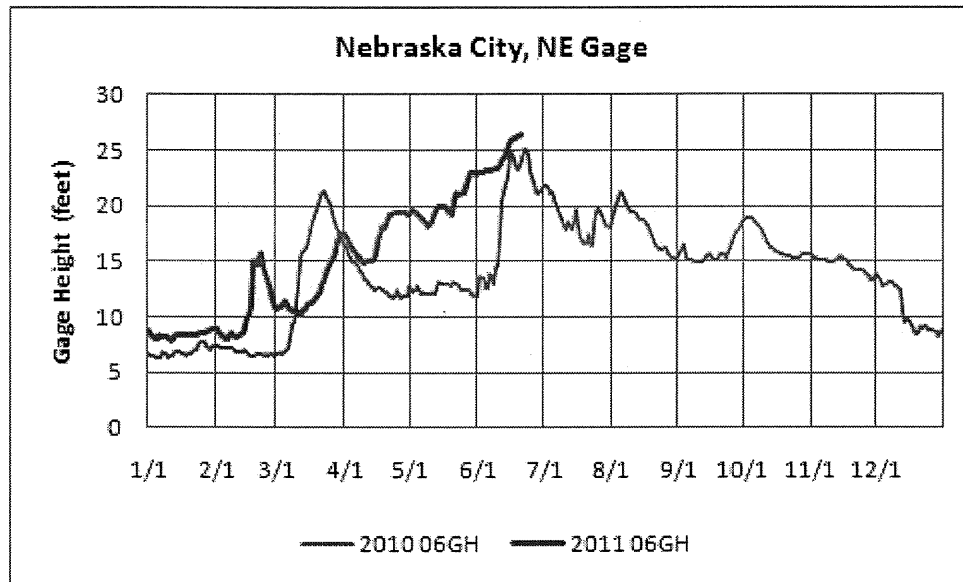


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Moderate rains fell over Eastern Montana, western North Dakota and much of Wyoming, South Dakota and Nebraska between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/20/2011 1200 UTC- Created 6/20/11 15:41 UTC

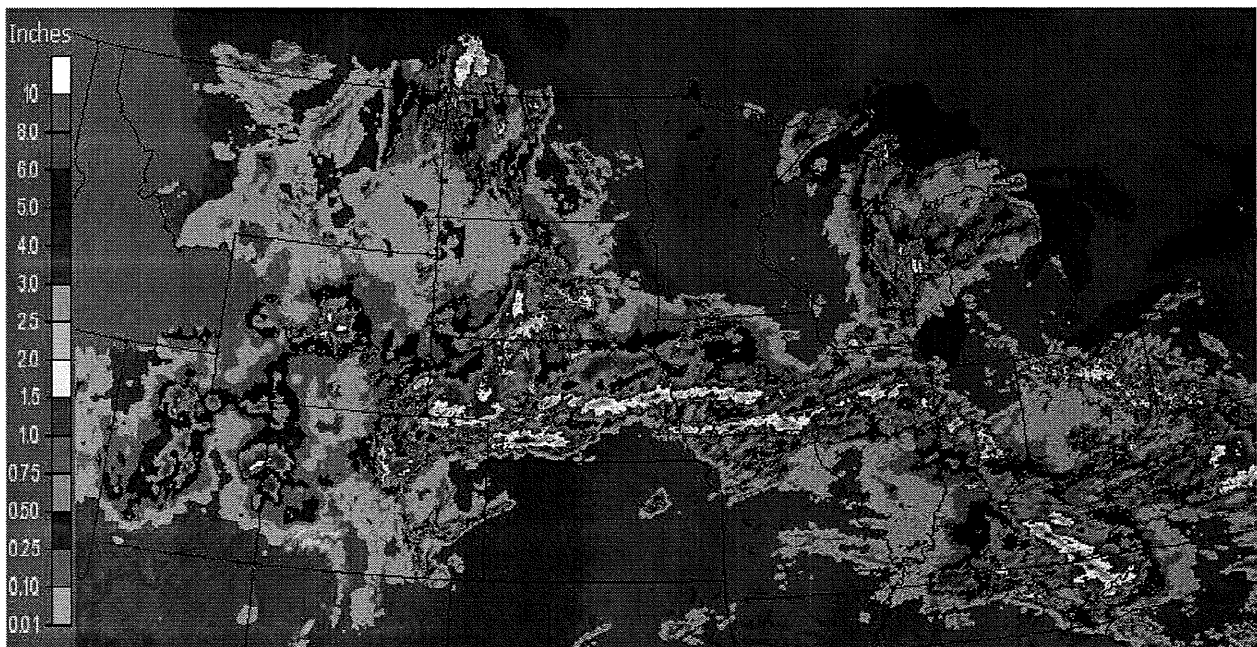
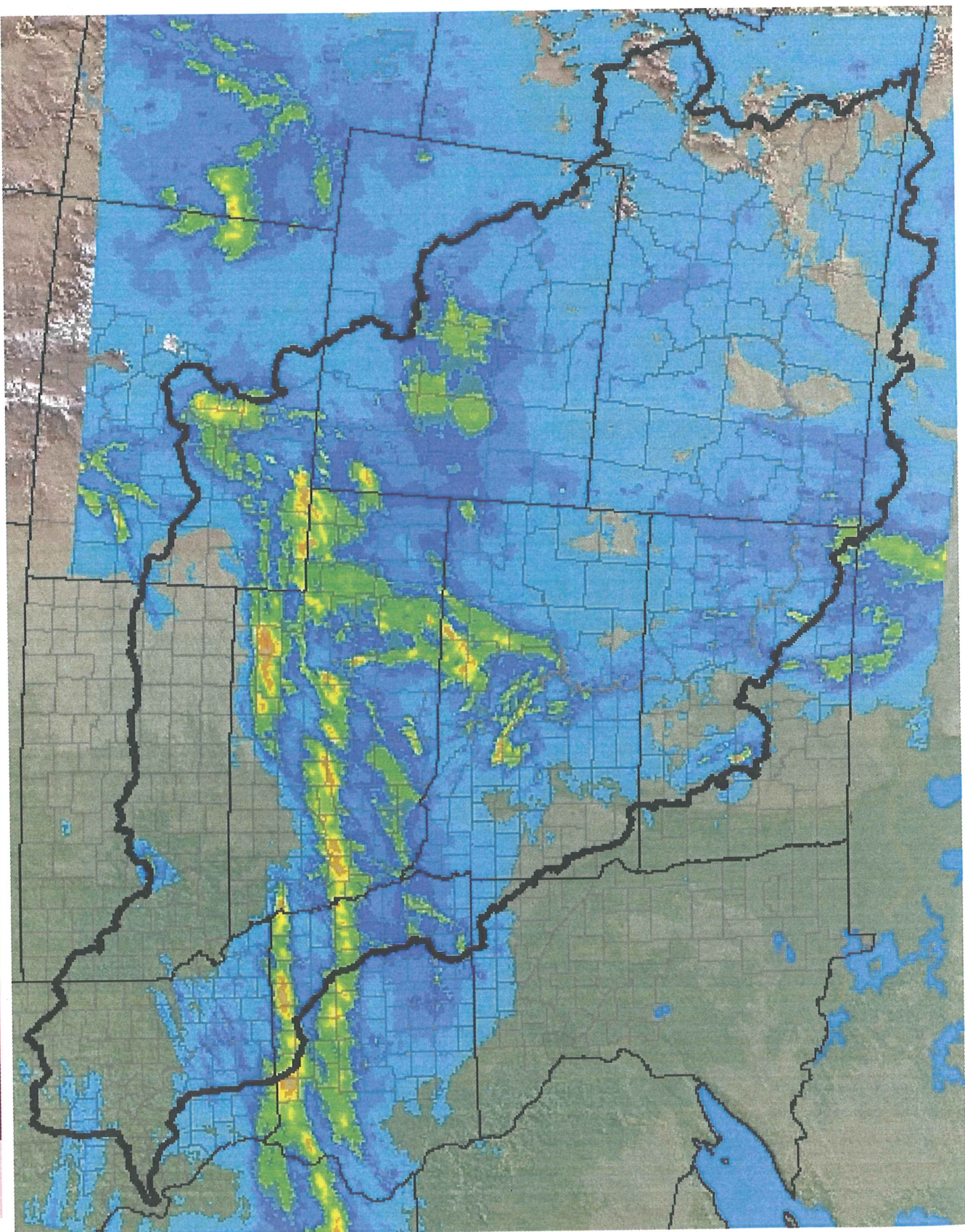


Figure 7. Rainfall on the Central Region of the United States for June 19, 2011.

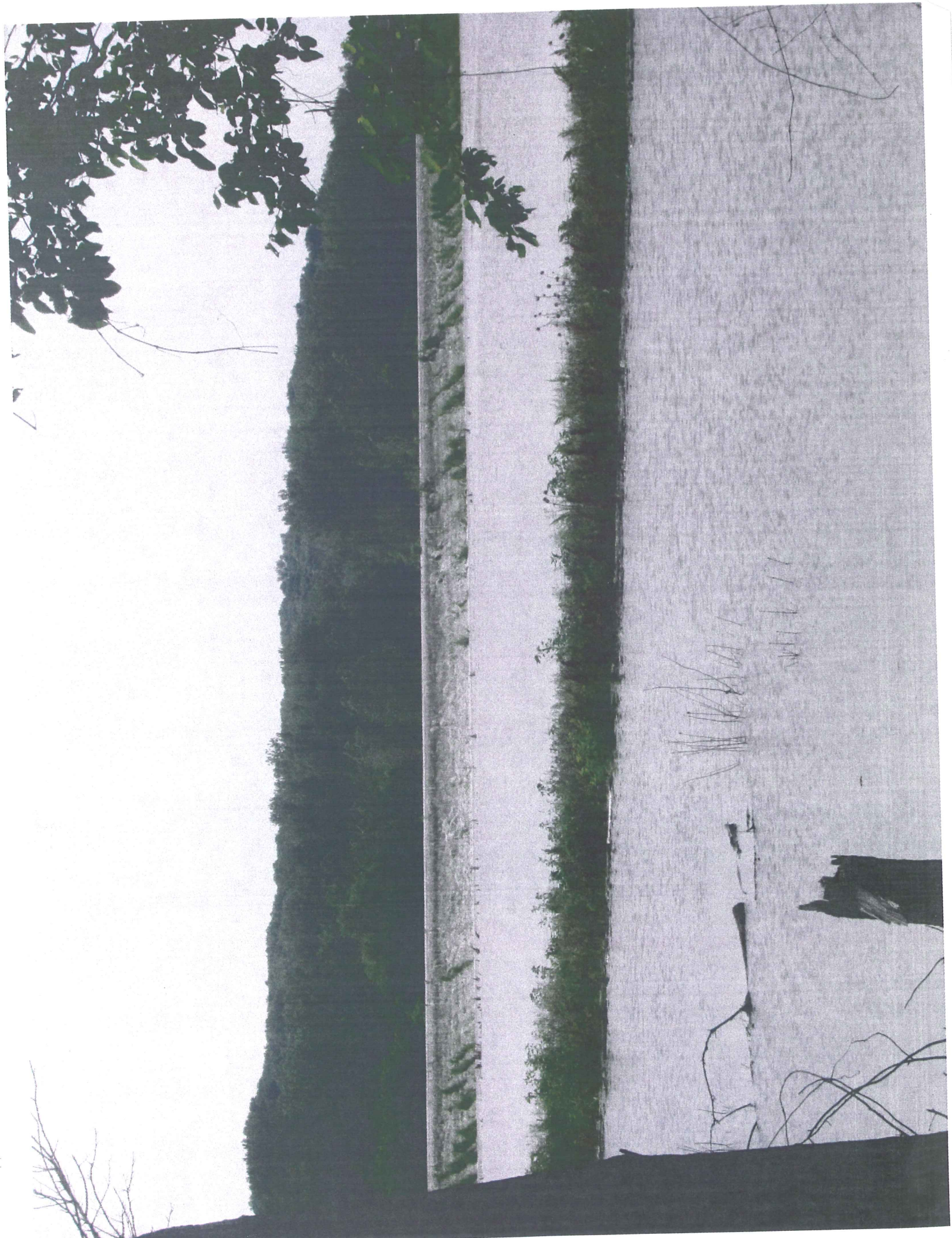


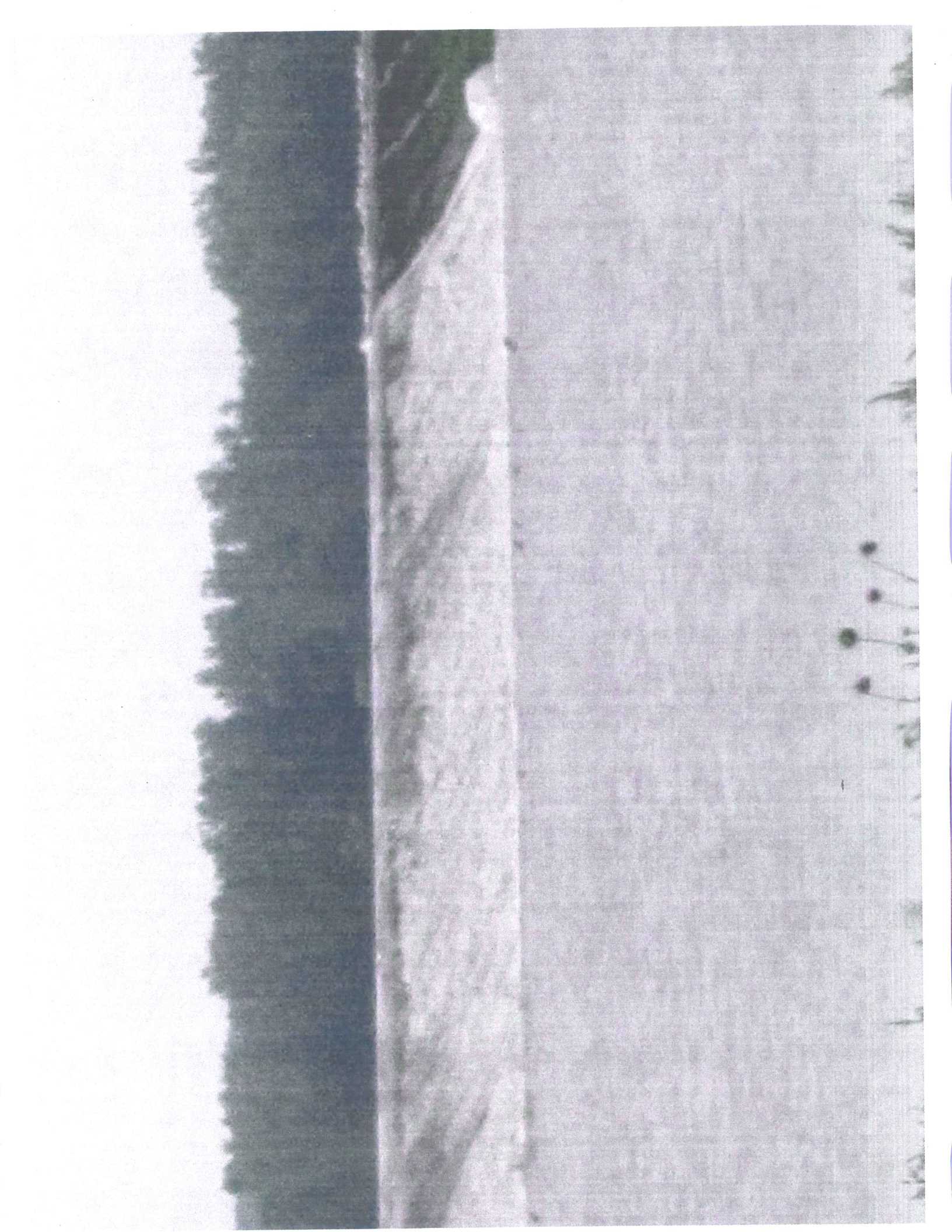
0.01 0.05 0.10 0.25 0.50 0.75 1.00 1.50 2.00 2.50 3.00 4.00 5.00 6.00 8.00 +

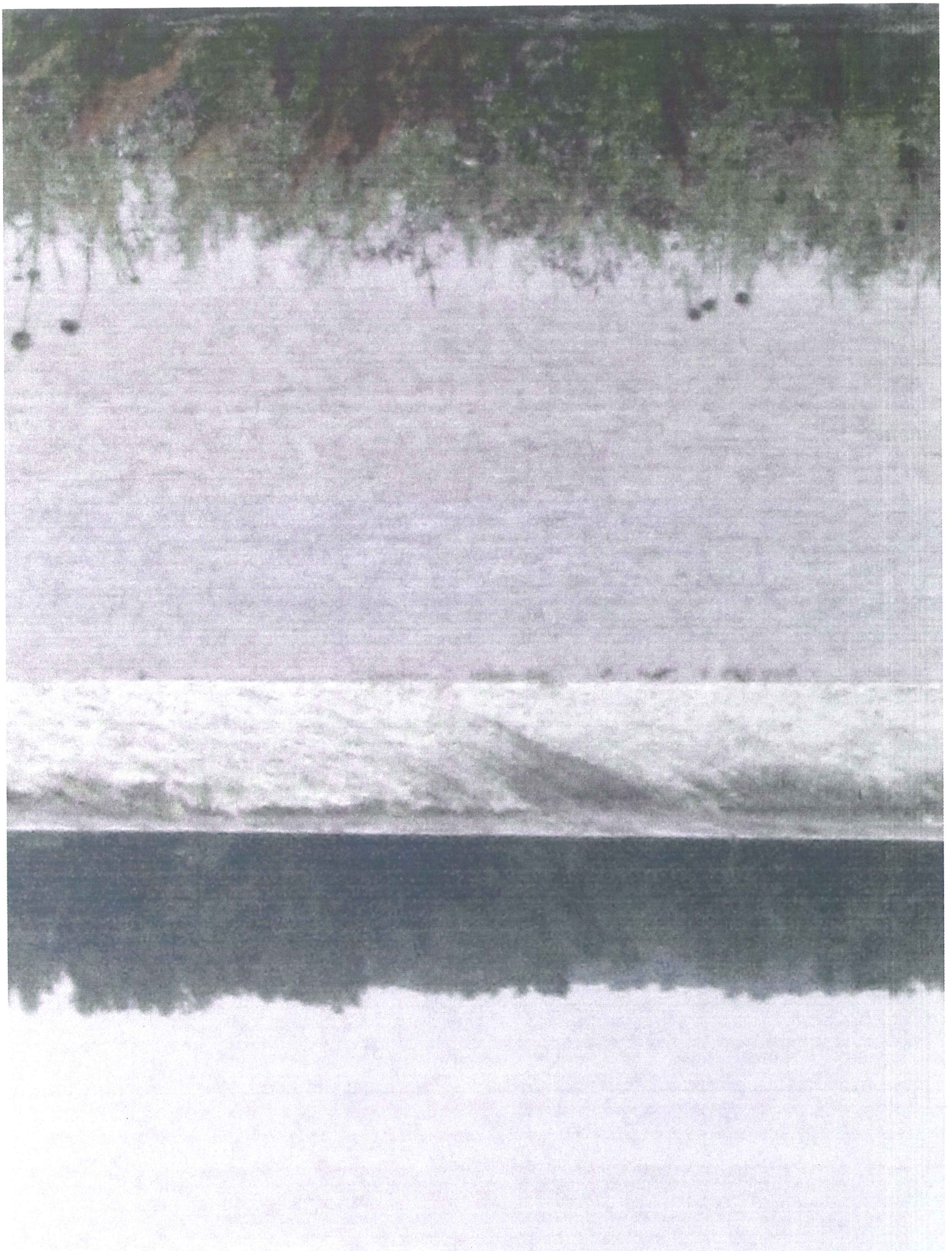
MBRFC 24-Hour Gage Biased Estimated Rainfall (inches)

Ending: 6/20/2011 at 7:00AM CDT

Created 6/20/2011 at 11:02 AM CDT











NWO

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 10:28 AM
To: Hofmann, Anthony J COL NWK
Subject: RE: Missouri (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

The combined storage capacity of the mainstem system is 73.1 MAF to the top of exclusive at all six dams. Today's storage is 72.4 MAF, but that number includes 0.6 MAF held in surcharge at Fort Peck and Garrison. So I would estimate the remaining storage, not including any surcharge at the other 4 projects to be $73.1 - (72.4 - 0.6) = 1.3$ MAF

Not sure if that answers the question.

The other way to look at this is that when we increased releases from Oahe and Big Bend last week we had about 1.0 MAF of storage capacity available in Fort Randall. Today that number is down to 0.7 MAF.

Let me know if you have any questions.

VR,
Jody

-----Original Message-----

From: Hofmann, Anthony J COL NWK
Sent: Wednesday, June 22, 2011 8:57 AM
To: Farhat, Jody S NWD02
Subject: Missouri

Jody-

I had a question from Missouri leadership after yesterday's decision on Gavin's releases. Question: we had approximately 1 million AF of storage in the system before the precip in last 72 hrs.

How much is left now?

Any help is appreciated.

Colonel Tony Hofmann, PMP
Commander, Kansas City District
U.S. Army Corps of Engineers
B.B. 816-807-0129

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 1:38 PM
To: [REDACTED] NWD
Subject: RE: gaining storage (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The water in storage is increasing every day - over 400,000 AF yesterday alone despite releasing 300,000 AF from Gavins Point.

And once we get to the 160 kcfs, we just intend to stay there. We need to evacuate flood waters asap.

-----Original Message-----

From: Love, Raymond E MAJ NWD
Sent: Wednesday, June 22, 2011 1:21 PM
To: Farhat, Jody S NWD02
Subject: gaining storage

1. When you say "gaining storage" does that mean more storage space becoming available in reservoirs?
2. By increasing to 160kcfs and keeping that level until August, is that just to evacuate the water from the recent rain event? It does not seem like it would take 45 days to evacuate an additional 4 inches? Or in other words, why wouldn't we just evacuate enough to be back on track for the 150k? If it requires a long answer, no worries, I was just thinking about that today. By my calculations an additional 10,000cfs amounts to a significant additional amount being released... more than it should take to evacuate a small 4inch rain event..

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers
Desk: [REDACTED]
Cell: [REDACTED]

[REDACTED]@usace.army.mil

[REDACTED]@usace.army.smil.mil

Emergency Satellite Phone: 8816-5142-9533 Emergency Cell: 503-888-3656

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NWO

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 1:39 PM
To: [REDACTED] HQ@NWO
Subject: RE: Your quote (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Works for me!

-----Original Message-----

From: [REDACTED] HQ@NWO
Sent: Wednesday, June 22, 2011 1:19 PM
To: Farhat, Jody S NWD02
Subject: Your quote (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:

Is the following accurate (or moderately close!) and might I use it as a quote from you . .
. or, feel free to edit as appropriate.

Jody Farhat, Chief of the USACE-NWD Missouri River Management Division, explained, "There's no simple prescriptive manual for this process. There are a plethora of impacting variables. Just a few of them are the amounts of past and projected rainfall, quantity and density of snowpack and anticipation of when it will melt, potential storage volume of reservoirs, their present state as relative to that capacity, water release adjustments and the myriad of dynamics related to reservoirs downstream."

Thank you very much.

[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 4:58 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; Blair, Amy E NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; Johnston, Paul T HQ@ NWO; [REDACTED] NWD; H [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD02; Love, Raymond E MAJ NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] M SAW
Cc: [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] Jr NWO; [REDACTED] D NWD02; [REDACTED] NWD02; [REDACTED] C NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 22 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 22 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
24 June 2011

The total volume of water stored in the Missouri River Mainstem reservoir system set a new record today when it reached 72.4 MAF, surpassing the previous record of 72.1 MAF set in July of 1975. Despite record releases from all of the projects, reservoir levels at five of the six dams and the total volume of water stored in the reservoir system continue to rise. Only the level of Fort Peck reservoir has shown a steady decline the past several days. We continue to monitor the situation closely; there is very little flexibility remaining.

The reservoir schedule posted on the web this afternoon includes updated reservoir inflow forecasts going out through July 22. These latest projections of inflow are based on runoff expected from remaining snowpack in the mountains and continued normal to above normal summer-type rains, but not extreme events like experienced last weekend. It also takes into consideration regulation of the tributary reservoirs upstream of Fort Peck and Garrison including storage available in those reservoirs and planned releases during forecast period.

With these latest inflow projections, there were no significant changes to the release schedules, but careful observers will notice that reservoir levels at Fort Peck and in particular, Garrison, are lower than previous projections. We have also added an additional week to the forecast, extending it out to 22 July.

As I mentioned, there were no significant changes to the release schedule posted on the web this afternoon.

- Releases from Fort Peck remain at 60,000 cfs.
- Releases from Garrison remain at 150,000 cfs.

Releases from Oahe reservoir were reduced from 160,000 cfs to 150,000 cfs yesterday due to very high flows on the Bad River, which enters the Missouri River just downstream of Pierre, SD. The release reduction was necessary to manage the Big Bend pool level; and also had the effect of limiting the stage increase in Pierre and Fort Pierre due to the high flows on the Bad river. Releases will remain at remain at 150,000 cfs until the flows on the Bad River recede and then will be returned to the 160,000 cfs rate, likely within the next day or two.

Big Bend releases were increased from 163,000 cfs yesterday to 165,000 cfs today. They will be maintained at that for about a week to help manage the Big Bend pool level.

Releases from Fort Randall were reduced to 138,000 cfs yesterday due to high inflows into Gavins Point reservoir. They will be held at that level for a couple days and will eventually be stepped up to approximately 157,000 cfs.

Releases from Gavins Point dam were increased to 155,000 cfs this morning and will be increased to 160,000 cfs on tomorrow morning. No additional release increases are planned at this time.

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. As witnessed this week, additional heavy rain over the basin may

result in changes to the release schedule. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 55%, down 61% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 59%, down 56% from this year's peak

As of June 21

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 43% (-72%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 35% (-77%)

NWO

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 6:59 PM
To: Hofmann, Anthony J COL NWK; [REDACTED] NWK
Subject: WM presentation for KC Star meeting on 23 June 2011 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sirs,

I've posted the updated water management briefing on the ftp site at the following link.

<ftp://ftp.usace.army.mil/usace/nwd/KC%20Star%20Meeting/>

The first 12 slides are what I would propose going covering and the remainder are backup information. I'm also open to suggestions on any of the first 12 that you don't think are necessary. We don't want to overwhelm them with too much PowerPoint.

Let me know if you have any questions/suggestions.

Thanks,
Jody

Jody Farhat, P.E.
Chief, Missouri River Basin Water Management

jody.s.farhat@usace.army.mil
Office: 402-996-3840
Cell: 402-350-1417
Home: 402-551-6013

Classification: UNCLASSIFIED
Caveats: NONE

From: Tom & Karla Waters [waters4@ix.netcom.com]
Sent: Wednesday, June 22, 2011 10:43 PM
To: McMahon, John R BG NWD
Cc: Farhat, Jody S NWD02
Subject: Master Manual
Attachments: Draft 05-06 AOP Info lq.pdf; ATT762323.htm

Importance: High

Dear General McMahon:

On Monday in Jefferson City, I briefly told you about a time in the past when the Corps of Engineers made changes to the Master Manual without a full blown review and update process. Tonight, I went back and found the attached information.

In the fall of 2005 during the 2006 AOP Public Hearings, the Corps used the AOP Hearings to also take comments on a supplement to the Master Manual. See the attached Corps Document signed by then Commander General Gregg Martin.

I believe the Corps of Engineers Northwestern Division should use the same process to make quick supplemental changes to the Master Manual which will provide more available storage for Flood Control in the reservoir system.

Please review the attached document and discuss it with your staff. The need for additional flood control storage is evident with today's flooding along the Missouri River. The Basin cannot afford to go through another 14-year multimillion dollar study. We need additional storage now, beginning with next year's AOP. I hope you will consider this quick option to make the changes the entire basin needs to better protect lives and property.

Thanks,
Tom



DEPARTMENT OF THE ARMY
NORTHWESTERN DIVISION, CORPS OF ENGINEERS
12565 WEST CENTER ROAD
OMAHA, NEBRASKA 68144-3869

REPLY TO
ATTENTION OF:

October 2005

This Draft Annual Operating Plan (AOP) presents pertinent information regarding water management in the Missouri River Mainstem Reservoir System (System) for the remainder of 2005 through February 2007. The information provided in this Draft AOP is based upon water management guidelines designed to meet the reservoir regulation objectives of the existing Missouri River Master Water Control Manual (Master Manual). This AOP also includes the implementation of a spring pulse, as required by the U.S. Fish and Wildlife Service's (USFWS) 2003 Amended Biological Opinion on the Operation of the System. The water control plan (WCP) in the Master Manual currently does not contain any technical criteria for a spring pulse. Therefore, if the final Corps of Engineers' (Corps) decision is to include spring pulse elements in the 2006 System regulation, the Master Manual will be supplemented prior to implementation of a spring pulse. A full description of the proposed spring pulse technical criteria, including its potential flexibility, has been provided as a separate document accompanying this Draft AOP.

Comments on the spring pulse technical criteria and its proposed flexibility will be accepted, along with any comments on this Draft AOP. All comments will be fully considered prior to the final decision on the AOP and the supplement to the Master Manual for the spring pulse. The Corps will also prepare appropriate National Environmental Policy Act (NEPA) documentation.

The guidelines included in the existing Master Manual and the proposed spring pulse WCP technical criteria are applied to computer simulations of System regulation assuming five statistically derived inflow scenarios based on an analysis of water supply records from 1898 to 1997. This approach provides a good range of water management simulations for dry, average, and wet conditions. Computer simulation data with and without the spring pulse components are also presented to allow comparison. The AOP information provides a framework for the development of detailed monthly, weekly, and daily regulation schedules for the System's six individual dams during the upcoming year to serve its Congressionally authorized project purposes. System water management is provided by my staff at the Missouri River Basin Water Management Division, Northwestern Division, U.S. Army Corps of Engineers, located in Omaha, Nebraska.

Two additional documents will also be available by mid-2006 entitled, "System Description and Operation" and "Summary of Actual 2005 Regulation." To receive copies of those documents, you may contact the Missouri River Basin Water Management Division at 12565 West Center Road, Omaha, Nebraska 68144-3869, phone (402) 697-2676. Both reports will also be available at the "Reports and Publications" link on our web site at: www.nwd-mr.usace.army.mil/rcc.

Eight public meetings to discuss both this Draft AOP and the supplement to the Master Manual are scheduled as follows: November 14 in Omaha and Nebraska City, Nebraska; November 15 in Kansas City, Missouri; November 16 in St Louis and Jefferson City, Missouri; November 17 in Pierre, South Dakota and Bismarck, North Dakota; and November 18 in Glasgow, Montana. We ask that any comments be provided by December 1, 2005. The Final AOP is scheduled for publication in December 2005. Copies of the written comments and a report summarizing the comments received at the eight public meetings will be available upon request.

I thank you for your interest in the regulation of the System and look forward to your participation in this process.

A blacked-out rectangular area, likely a redacted signature or name.

Gregg F. Martin
Colonel (Promotable), US Army
Division Engineer

Draft Spring Pulse Water Control Plan Technical Criteria

In December 2003, the U.S. Fish and Wildlife Service (USFWS) presented the Corps of Engineers (Corps) with its Amended Biological Opinion on the Operation of the Missouri River Mainstem System (System), Operation and Maintenance of the Missouri River Bank Stabilization and Navigation Channel, and Operation of the Kansas River Reservoir System (2003 Amended BiOp). That document presented the USFWS' opinion that the operation of the System would jeopardize the continued existence of the endangered interior least tern, threatened piping plover, and the endangered pallid sturgeon. The USFWS provided a Reasonable and Prudent Alternative (RPA) to avoid jeopardy to these species. For the endangered pallid sturgeon, the RPA included a provision that the Corps should develop a plan to implement a 'spring pulse' from Gavins Point Dam. The Missouri River Master Water Control Manual (Master Manual), which presents the water control plan (WCP) and operational objectives for the integrated regulation of the System, currently does not contain any technical criteria for a spring pulse.

The proposed spring pulse technical criteria are described below (Tables 1 & 2), including potential WCP flexibility (Table 3). Comments on these criteria will be accepted along with any comments on the Draft 2005-2006 Annual Operating Plan (AOP). All of those comments will be fully considered and integrated, if appropriate, into a supplement to the Master Manual and the Final 2005-2006 AOP. The Corps will also conduct Section 106 consultation, as provided for in the existing Programmatic Agreement and Government-to-Government consultations with the basin Tribes on the Master Manual supplement.

The spring pulse plan was developed based on the "Initial Starting Point" (ISP) presented in the 2003 Amended BiOp and input from the spring pulse Plenary Group and its technical working groups. These groups were involved in the recent spring pulse facilitated Tribal, State, and stakeholder process (spring pulse facilitated process) conducted by CDR Associates, a contractor for the U.S. Institute for Environmental Conflict Resolution. The purpose of this facilitated process was to develop a consensus approach on a Gavins Point Dam spring pulse plan. While the facilitated process did not develop a consensus approach, the Corps has utilized technical information from that process to develop the proposed WCP technical criteria for the spring pulse, which is set forth below.

TABLE 1
WCP TECHNICAL CRITERIA FOR SPRING PULSES
FROM GAVINS POINT DAM

Criteria Applicable to Both the March and May Spring Pulses

Flood Control Constraints	No change from current levels.
---------------------------	--------------------------------

Criteria Applicable to the March Spring Pulse

Drought Preclude	Initially 36.5 MAF or below measured on March 1 until this criteria results in a March spring pulse. Thereafter, 40.0 MAF or below measured on March 1.
Drought Proration of Pulse Magnitude*	None, 5 kcfs added to navigation releases, but no greater than 35 kcfs.
Initiation of Pulse	Extend the stepped System release increases that precede the beginning of the navigation season.
Rate of Rise before Peak	Approximately 5 kcfs for 1 day.
Duration of Peak	Two days.
Rate of Fall after Peak	Drop over 5 days to navigation target release.

Criteria Applicable to Time Period Between the Bimodal Pulses

Release	Existing Master Manual Criteria.
---------	----------------------------------

Criteria Applicable to the May Spring Pulse

Drought Preclude	Initially 36.5 MAF or below measured on May 1 until this criteria results in a May spring pulse. Thereafter, 40.0 MAF or below measured on May 1.
Proration of Pulse Magnitude Based On System Storage*	Prorated from 16 kcfs based on a May 1 System Storage check; 100% at 54.5 MAF; straight line interpolation to 75% at 40.0 MAF.

Criteria Applicable to the May Spring Pulse (Cont'd)

Proration of Pulse Magnitude Based On Projected Runoff*	After the proration of the spring pulse magnitude for System Storage, the resultant magnitude would be further adjusted either up or down based on the May CY runoff forecast; 100% for median; straight-line interpolation to 125% at upper quartile runoff; 125% for runoff above upper quartile; straight-line interpolation to 75% at lower quartile runoff; 75% for runoff below lower quartile.
Initiation of Pulse	Between May 1 to May 19, depending on Missouri River water temperature immediately below Gavins Point Dam. If possible, pulse will be initiated after the second daily occurrence of a 16 degree Celsius water temperature; however, the decision will be informed by the potential for 'take' of threatened and endangered bird species.
Rate of Rise before Peak	Approximately 6 kcfs per day.
Duration of Peak	Two days.
Fall Rate after Peak	Approximately 30% drop over 2 days, followed by a proportional reduction in releases back to the existing Master Manual Criteria over an 8-day period.

* Spring pulse magnitudes will be determined by taking the difference between pre-pulse Gavins Point releases and the peak pulse Missouri River flows measured just downstream of the mouth of the James River.

During the spring pulse facilitated process, many downstream stakeholders indicated that there should be downstream spring pulse flow limits that would decrease the chance of additional interior drainage flooding of agricultural land due to a spring pulse. They indicated that these downstream flow limits should be no higher than the existing downstream flood control constraints. The spring pulse downstream flow limits for this plan at Omaha, Nebraska City, and Kansas City, shown in Table 2, are equivalent to the minimum values (most protective) of the existing flood control constraints at those locations. Many spring pulse facilitated process participants also indicated that the Corps should use forecasted precipitation in its river flow forecast models to further protect downstream agricultural land from potential negative impacts associated with the spring pulse. Therefore, the Corps will include forecasted precipitation in the daily Missouri River forecast during the spring pulse implementation time period. If that

forecast indicates that these flow limits will be exceeded during the spring pulse time period, the Gavins Point release will be reduced accordingly to avoid exceeding those downstream flow limits.

TABLE 2
DOWNSTREAM SPRING PULSE FLOW LIMITS

<u>Location</u>	<u>Flow Limit (kcfs)</u>
Omaha	41
Nebraska City	47
Kansas City	71

TABLE 3
WCP FLEXIBILITY FOR SPRING PULSES

Flexibility Applicable to Both the March and May Spring Pulses

Downstream Flow Limits	Could be increased to no more than the "minimally increased" flood control targets identified by the Corps during the spring pulse facilitated process. The associated downstream flow limits would be 49 kcfs at Omaha, 55 kcfs at Nebraska City and 75 kcfs at Kansas City.
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Flexibility Applicable to the March Spring Pulse

Duration of Peak	Could be increased to no more than 5 days.
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Flexibility Applicable to the May Spring Pulse

Rate of Rise before Peak	Could be decreased to no less than 4 kcfs per day and increased to no more than 8 kcfs per day.
Duration of Peak	Could be increased to no more than 5 days.
Rate of Fall after Peak	While maintaining the approximately 30% drop over 2 days, the tail of the spring pulse hydrograph could be extended to 14 days.
Use of James River Target	When not required as a drought conservation measure, the magnitude of the spring rise could be measured at Gavins Point Dam rather than below the confluence with the James River.

The WCP flexibility, presented in Table 3, is designed to facilitate the adaptive management process. It will not be exercised until it is determined that this flexibility is necessary to meet the life history needs of the pallid sturgeon. In addition to comments received on this WCP technical criteria and the 2005-2006 AOP, the Corps will also participate with States, Tribes, and stakeholders in forums conducted by the U.S. Institute for Conflict Resolution related to the spring pulse issue. This includes the current Spring Pulse Plenary and its technical working groups or their eventual successors within the Missouri River Recovery Implementation Committee (MRRIC). The States, Tribes, stakeholders, and general public will be afforded ample opportunity to comment on the WCP flexibility prior to implementation.

The National Environmental Policy Act (NEPA) process was followed for the recent revision of the Missouri River Master Water Control Manual (Master Manual). That NEPA process culminated in a Record of Decision dated April 19, 2004. The Missouri River Master Water Control Manual Revised Draft Environmental Impact Statement published in August 2001 and the Master Manual Final Environmental Impact Statement, published in March 2004, presented impacts to key river uses and resources associated with a spring pulse operation for several alternatives. An Environmental Assessment will be completed prior to the supplementation of the Master Manual to determine if impacts associated with the implementation of the spring pulse WCP technical criteria, including those associated with the WCP flexibility described above, are within the range of impacts analyzed for those alternatives, or whether an Environmental Impact Statement should be prepared for these changes.

[REDACTED]

From: CENWD-EOC NWD
Sent: Wednesday, June 22, 2011 11:36 PM
To: CE-UOC HQ02
Cc: Acheson, William E LTC NWS; Anderson, G Witt NWD; [REDACTED] HQ@NWD; [REDACTED] ULA; [REDACTED] NWD; [REDACTED] NWD; Blechinger, Erik T NWO; [REDACTED] LTC NWW; Capps, Stephan A LTC NWP; CENWD-EOC NWD; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Eller, Ronald; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] HQ; [REDACTED] HQ02; [REDACTED] HQ02; Hains, Decker B LTC NWW; [REDACTED] NWD; [REDACTED] NWD; Hofmann, Anthony J COL NWK; [REDACTED] HQ02; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Jordano, James J LTC NWO; [REDACTED] ULA@SAD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] HQ; [REDACTED] NWS; [REDACTED] NWD; [REDACTED] SAW; [REDACTED] @NWD; McMahon, John R BG NWD; Miles, Steven R COL NWP; [REDACTED] NWD; [REDACTED] NWD; [REDACTED] CELA@NWS; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] NWD; Regis, John ; Ruch, Robert J COL NWO; [REDACTED] NWD; Rychlik, Dean L; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] SWD@SWG; [REDACTED] NWD; Tipton, Robert A Col NWD; [REDACTED] NWD; [REDACTED] HQ02; [REDACTED] ULA@NWW; [REDACTED] HQ02; [REDACTED] NWD; Wetzel, Lindsey ; Wright, Anthony COL NWS

Subject: NWD Operation Mighty Mo SITREP- as of 2130 22 June 2011 (UNCLASSIFIED)
Attachments: Copy of NWD CT EOC ACTION TRACKER 22 Jun 11.xlsm; Flood_Fight_Storyboard_22JUN.pdf; NWD Missouri Basin Update - 062211.pdf; NWD%20Contingency%20battle%20rhythm%2013%20JUN%202011.pdf; NWO Pictures_21_Jun_2011.pdf

HQ UOC-

Missouri River Basin Flood Update as of 2130 Wednesday, 22 June 2011 Pacific Time:

This report covers the operational period from 2130 Tuesday June 21, to 2130 Wednesday, June 22, 2011 Pacific Time.

Summary of NWD Missouri River Water Management Office Update:

1. BLUF: The total volume of water stored in the Missouri River Mainstem reservoir system set a new record today when it reached 72.4 MAF, surpassing the previous record of 72.1 MAF set in July of 1975. Despite record releases from all of the projects, reservoir levels at five of the six dams and the total volume of water stored in the reservoir system continue to rise. Only the level of Fort Peck reservoir has shown a steady decline the past several days. They continue to monitor the situation closely but there is very little flexibility remaining.
2. The reservoir schedule posted today included updated reservoir inflow forecasts going out through July 22. These latest projections of inflow are based on runoff expected from remaining snowpack in the mountains and continued normal to above normal summer-type rains, but not extreme events like experienced last weekend. It also takes into consideration regulation of the tributary reservoirs upstream of Fort Peck and Garrison including storage available in those reservoirs and planned releases during forecast period.
3. Careful observers will notice that reservoir levels at Fort Peck and in particular, Garrison, are lower than previous projections, and they added an additional week to the forecast, extending it out to 22 July.

4. There were no significant changes to the release schedule: Releases from Fort Peck remain at 60,000 cfs.
and releases from Garrison remain at 150,000 cfs.
5. As planned, releases from Gavins Point dam were increased to 155,000 cfs this morning and will be increased to 160,000 cfs on tomorrow morning. No additional release increases are planned at this time.
- -----

B. Omaha District Update:

1. Nebraska: Knox County, NE - USACE Omaha District will be supplying the NDOT 100 - 1 Ton super sacks for protection of the intersection of US Highway 12 and Spur 54D to provide access to Village of Santee.
2. Garrison Dam, ND - The Garrison Project is attempting to energize unit #5, if this is successful they will be able to pass more flow through the power house. No other significant dam safety issues to report.
3. Dakota Dunes, SD - Continuing to monitor, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.
4. Fort Randall Dam, SD - The repair of concrete slab spalling work was completed today.
5. Oacoma, SD - Geotechnical branch personnel visited Oacoma today. They looked at the city's sewage lagoons due to concerns with erosion from high lake levels and their effect on the berms. It was reported that there would not likely be much erosion. The city did receive detailed survey information from Banner and Associates. They have suggested their citizens build protection to elevation 1380. The latest forecast for July 15th projects a lake level of 1373. The Chamberlain/Oacoma area typically is 1 - 2 feet higher than at the dam. Engineering is working on providing a wave height estimate for the area.
6. Iowa/Missouri: Sioux City: Due to recent rain the contractor is placing additional rock on low point on access road. The additional rock work will begin tomorrow.
7. Pottawattamie County (L624-627): USACE is continuing to work the direct assistance for the reverse filter blanket along areas on the MR Levee L624-627. USACE personnel along with the City of Council Bluffs performed a site walk today to finalize scope of work.
8. Monona County: USACE received a technical assistance request from the State of Iowa today for the City of Onawa. The City of Onawa in Monona County is exploring options to protect critical infrastructure in the city, to include possibly constructing a dike to protect infrastructure from rising flood waters, and wish to consult with the USACE expertise on the matter. Monona County also swapped out a 12" for 16" pump.
9. Hamburg Levee: Plan is to converge on the active boil area from two sides. Will resume 24/7 op's provided the site does not get any additional rain. Have a 30 man crew on today to address the poly that was damaged (mostly on Segment 3) in Monday night's storm.

10. Coordinating Nishnabotna(L-575 tieback) levee raise with sponsor today. Sponsor is providing material. Expect to start work tomorrow.
11. Atchison County, MO - USACE personnel attended a meeting with MDOT and Atchison County to discuss Hwy 136 and possible reopening.
12. Omaha-Missouri River RB:Eppley Airfield is in the process of installing a number of wells in attempt to draw down the water table. The inverted filter approximately 0.5 miles north of the I-80 overpass is being cut down and widened, perpendicular to the levee, in response to additional boils developing at the toe of the filter.
13. L624-627/614/611-Mosquito Creek and Upper Pony Creek:
The Corps is currently involved in the development of inverted filter contracts with the City of Council Bluffs.
14. [FOUO] L611/614-MoRiver LB & Upper Pony Creek Ditch LB: The Sponsor has plugged a gate that had been stuck open with large sandbags. Upon inspection, field crews have suspicions that an adequate seal may not have been made, as air can be heard filtering through the pump. The sponsor is being contacted on the issue. Significant areas of seepage and boil activity continues. Work on the inverted filter placement continues.
15. L601/594: Water was on crest of levee in 4 areas yesterday. Up to approximately 1 foot of freeboard at low areas today (above levee high point). Sponsor sandbagging low areas for approximately 725 feet.
16. L550/561-Missouri River LB: National Guard completed sandbag placement on crest via helicopter in overtopping in some of the areas upstream of HWY 136. Levee still overtopping today. Sponsor did report water flowing from holes on landward slope last night with the water flowing clear. Sponsor will continue to monitor.
17. L536/550-Turkey Creek: Erosion into Mill Creek tie-back continues at a slow rate. Turbulent flow has moved further away from the levee. Sponsor has indicated that they will request assistance to place large sand bags against the face of the erosion scarp to attempt to minimize further erosion. The Corps supports this action. The remainder of the levee system appears to be in good condition.
18. R616/613-MO River RB and Papillion Creek LB: As of 1230, 6-22 - the levee showed approximately 4.5 ft of freeboard. After further investigation of the Papio Water Treatment Plant, it is the opinion of the field crew that the source of the seepage in question may be interior drainage. City was informed of finding.
19. [FOUO] R613-Platte LB and Papillion RB and MO River RB: Regarding the request for technical and direct assistance from Lake Waconda: NWO informed the State that we can provide technical, but not direct assistance.
20. R562-Peru:Sloughing was observed along riverside section of the levee. County Emergency Management was contacted, and responded rapidly, laying rip-rap over the area. The levee shows approximately 6" of freeboard to the crest of the levee in low areas, which was raised to approximately 1' when you include sandbags that have been placed atop the crest.
21. [FOUO] R548- MO River and Little Nemaha: The levee sponsor is not fulfilling their levee sponsor roles in the preparation, maintenance, and flood fight of their levee system. Levee rodent holes are not being filled after flagged by USACE, they are not actively monitoring their levee system and discovering and mitigating these early warning issues. NWO is engaging with state, and sponsor regarding these issues, and will attempt to resolve regionally. NWO will continue to engage and update status as appropriate.

C. Kansas City District:

1. Coast Guard extended river closure from river mile 450 to 550 to all traffic.
 2. No new pl 84-99 breaches in NWK today
 3. Teams continue to provide technical assistance for all 13 Federal Levee Systems upstream of the Kansas City Metropolitan area.
 4. Relief well construction began on Monday at Lake Contrary in St. Joseph MO., and continues. A total of 6 relief wells are planned to be installed. Currently, 2 have been completed. There was no aerial reconnaissance conducted today. However, flights will resume tomorrow.
 5. There are no public meetings scheduled for today.
 6. NWK continues to produce and update flood information related products. For the most up to date information available, please visit the Kansas City District's webpage:
<http://www.nwk.usace.army.mil>
- -----

D. Northwestern Division Update:

1. [FOUO] In order to improve synchronizing our strategic messaging within USACE, we are going to start including an update of Significant Strategic Engagements with this nightly SITREP. The intent, is to ensure HQUSACE has situational awareness of contacts we are making and the messages we delivered, to ensure synchronization, continuity, and effective of messaging from District through HQUSACE.

NWD Congressional Visits- reference MO River Flooding, scheduled for this week in Washington, DC:

- a. [FOUO] Thursday, June 23, 2011: Senator Roy Blunt, Senator John Hoeven, Senator Jon Tester, Representative Emanuel Cleaver, Senator Tim Johnson, and Representative Kristi Noem with the NWD Commander and SES.

2. As the flood waters continue to impact the Upper Missouri Basin and also move toward the Lower Missouri Basin, NWD has made deliberative effort to identify critical infrastructure that could be impacted. The following SharePoint site is available to view that critical infrastructure. For any questions or concerns related to critical infrastructure, the NWD POC is LTC Stephen Hric stphen.l.hric@usace.army.mil. For critical infrastructure analysis or information, view:

<https://kme.usace.army.mil/CoPs/Emergency-Management/NWD/2011%20NWD%20Floods%20and%20Tornado/Forms/AllItems.aspx?RootFolder=%2fCoPs%2fEmergency%2dManagement%2fNWD%2f2011%20NWD%20Floods%20and%20Tornado%2fMaps%2fNGA%20Produced&FolderCTID=&View=%7bAD74CE06%2dFA03%2d48A4%2dBEAE%2d602CEA804E5F%7d>

3. NWD is not tracking any RFI due to HQUSACE at this time. If there are any outstanding RFI from HQ from NWD, please contact CENWD-EOC@usace.army.mil or MAJ Raymond Love at Raymond.e.love@usace.army.mil. Please do not contact NWO or NWK directly, as they are already heavily engaged with state and local stakeholders, and information flows best when using the chain of command. Requests to be added to the distribution list for this report should go to MAJ Love.

E. The links below will help "paint the picture" of the region, and also pre-empt questions and RFI's by providing access to the same real-time data that NWD and its Districts use.

Useful Links:

For current reservoir levels, inflows and releases, visit the Missouri River Basin Water Management website at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

Updated Daily: Details on the reservoirs in the daily bulletin at <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>

Release data for all six reservoirs through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>

This ftp site contains an excellent pictorial presentation of the Missouri River Basin system. Please take time to review, as it will help you to better understand the situation and the system we manage.

<ftp://ftp.usace.army.mil/pub/nwd/Mo%20River%20Flooding%206%20June%20update/>

[FOUO] The NWD Common Operating Picture. (Contains National Levy Data base, 1-5 day QPF, Dams, Emergency Management layers, latest critical infrastructure data, etc.)
<https://egis.nwd.usace.army.mil/pls/apex/f?p=200:1:1908605002954834>

[FOUO] For great "pictures from the field" of the flood fight, projects, etc visit the MICA (Mobile Information Collectors Application) website:
<https://gearportal.usace.army.mil/sandboils/listing.html>

Select Omaha Flood Fight - "Show Map in Portal" Button.

To use Google Earth - on the MICA Dashboard hit the button "right click to copy to Network link" with a right click. Select Copy Shortcut option.

Open Google Earth and Right click under my places and select Add - scroll down to add a Network link.

Give it a name and paste the short cut you copied from the MICA dashboard. Google should auto refresh the data on a 5 min interval.

For the most accurate and efficient flow of information, please direct and questions, concerns, or comments to the NWD EOC, or to the undersigned. The NWD RCO Battle rhythm is also attached, and it is the most current as of 22 June 2011.

UOC: please acknowledge Receipt.

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers
Desk: [REDACTED]
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US Army Corps
of Engineers
Chadron District

Missouri River Mainstem Reservoir Bulletin (Updated 22 Jun; 1000 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2251.8 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow 47,000 cfs (21 Jun) 50,000 cfs (20 Jun) Daily Avg. Release 60,200 cfs (21 Jun) 61,800 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been decreased to 60,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1854.3 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 192,000 cfs (21 Jun) 188,000 cfs (20 Jun) Daily Avg. Release 150,400 cfs (21 Jun) 150,200 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) 1854 ft msl River Stage (Bismarck) 18.89 (0715 CDT 22 Jun) - Flood stage – 16 ft 18.85 (0815 CDT 21 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. - Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1619.3 ft msl 24-hr Change (+0.4 ft) Daily Avg. Inflow 218,000 cfs (21 Jun) 201,000 cfs (20 Jun) Daily Avg. Release 153,900 cfs (21 Jun) 160,300 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) 1620 ft msl River Stage (Pierre) 19.71 (0731 CDT 22 Jun) - Flood stage – 15 ft 19.81 (0730 CDT 21 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 160,000 cfs. - Reservoir is currently in the exclusive flood control zone. - Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1421.0 ft msl 24-hr Change (+1.1 ft) Daily Avg. Inflow 195,000 cfs (21 Jun) 172,000 cfs (20 Jun) Daily Avg. Release 162,900 cfs (21 Jun) 158,900 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 165,000 over the next 24 hours. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 165,000 cfs (Late June)	Midnight Elevation 1368.0 ft msl 24-hr Change (+1.7 ft) Daily Avg. Inflow 213,000 cfs (21 Jun) 200,000 cfs (20 Jun) Daily Avg. Release 139,600 cfs (21 Jun) 143,500 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 157,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 157,000 cfs (Late June)	Midnight Elevation 1208.1 ft msl 24-hr Change (+0.7 ft) Daily Avg. Inflow 159,000 cfs (21 Jun) 150,000 cfs (20 Jun) Daily Avg. Release 150,900 cfs (21 Jun) 150,000 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs over the next two days. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Late June)

Release and inflow figures include a + or – 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Isolated showers and t-storms after 3pm. Areas of fog before 9am, otherwise mostly sunny, high near 78. East southeast wind 5 to 8 mph. Chance of precipitation is 20%. Tonight: Isolated showers and t-storms before 9pm. Partly cloudy, low around 57. East southeast wind 9 to 11 mph. Chance of precipitation is 20%. Thursday: Mostly sunny, high near 82. East southeast wind 11 to 14 mph increasing to 19 to 22 mph. Winds could gust as high as 30 mph. 24-hr forecast (Williston, ND) Today: Mostly sunny, high near 73. North wind 6 to 9 mph. Tonight: Mostly clear, low around 53. North wind at 9 mph becoming east. Thursday: Sunny, high near 75. Light wind becoming southeast 10 to 13 mph.	24-hr forecast (Riverdale, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind around 17 mph, with gusts as high as 24 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, with a low around 52. North wind 11 to 14 mph becoming calm. Winds could gust as high as 20 mph. Thursday: Sunny, high near 73. Calm wind becoming east 4 to 7 mph. 24-hr forecast (Washburn, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 68. North wind 17 to 20 mph, with gusts as high as 28 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, low around 51. North wind 12 to 15 mph becoming calm. Winds could gust as high as 21 mph. Thursday: Sunny, high near 73. North wind 3 and 7 mph.	24-hr forecast (Pierre, SD) Today: Mostly sunny, high near 72. North northwest wind 21 to 25 mph, with gusts as high as 34 mph. Tonight: Mostly clear, low around 51. North northwest wind 17 to 20 mph decreasing to 6 to 9 mph. Thursday: Sunny, high near 75. North northwest wind around 8 mph. 24-hr forecast (Ft. Pierre, SD) Today: Mostly sunny, high near 73. North northwest wind 21 to 25 mph, with gusts as high as 34 mph. Tonight: Mostly clear, low around 51. North northwest wind 15 to 18 mph decreasing to 6 to 9 mph. Thursday: Sunny, high near 75. North northwest wind around 8 mph.	24-hr forecast (Lower Brule, SD) Today: Isolated showers before 1pm. Partly sunny, high near 71. North northwest wind 22 to 25 mph, with gusts as high as 36 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 52. North northwest wind 8 to 17 mph. Thursday: Sunny, high near 75. North northwest wind 8 to 10 mph.	24-hr forecast (Chamberlain, SD) Today: Slight chance of showers before 1pm. Mostly cloudy, high near 72. North northwest wind 23 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 52. North northwest wind 8 to 16 mph. Thursday: Sunny, high near 76. North northwest wind 8 to 10 mph.	24-hr forecast (Yankton, SD) Today: Showers likely, mainly before 1pm. Cloudy, high near 69. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 inch possible. Tonight: Cloudy, then gradually becoming partly cloudy, with low around 54. Northwest wind 11 to 18 mph, with gusts as high as 28 mph. Thursday: Sunny, high near 75. Northwest wind 13 to 16 mph. 24-hr forecast (Sioux City, IA) Today: Showers likely, mainly before 1pm. Cloudy, high near 67. Northwest wind around 23 mph, with gusts as high as 32 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 inch possible. Tonight: Slight chance of showers before 1am. Cloudy, then gradually becoming partly cloudy, low around 55. Northwest wind 10 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 20%. Thursday: Mostly sunny, high near 74. Northwest wind 13 to 17 mph, with gusts as high as 26 mph.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind 17 to 21 mph, with gusts as high as 29 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, low around 50. North wind 13 to 16 mph becoming light. Winds could gust as high as 23 mph. Thursday: Sunny, high near 75. North wind 3 to 7 mph.				24-hr forecast (Omaha, NE) Today: 30% chance of showers, mainly before 1pm. Cloudy, high near 70. Northwest wind 20 to 22 mph, with gusts as high as 31 mph. New rainfall amounts 0.1 inch possible. Tonight: Mostly cloudy, gradually becoming clear, low around 58. Northwest wind 8 to 17 mph, with gusts as high as 26 mph. Thursday: Sunny, high near 75. Northwest wind 11 to 15 mph, with gusts as high as 22 mph

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>



Missouri River Flooding (Logistics) (Updated 22 Jun; 1000 CDT)

Personnel Deployed

7 (Glasgow, MT)	5 (Pierre, SD)	16 (Missouri River Survey – 7 teams)
1 (Garrison, ND)	1 (Kansas City, MO)	1 (Lincoln, NE)
4 (Bismarck, ND)	3 (Sioux City, IA)	1 (Offutt, NE)
1 (Fort Yates, ND)	1 (S. Sioux City, NE)	5 (Hamburg, IA)
6 (Williston, ND)	1 (Onawa, IA)	

Equipment Deployed

HESCO (3' and 4') Issued: 74,270 LF On Hand: 35,750 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,225 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' x 500')
Pumps Issued: 48 pumps On Hand: 8 pumps (7 – serviceable) On Hand: 2 – 8" diesel pumps available; 5 – PTO pumps "on hold" for emergency response Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 PTO pump awaiting parts/repair

Source of information: CMT Brief (21 Jun 11)

Missouri River Basin Stages

22 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.9	150 kcfs 20.6	June 19	
B	Pierre	13	19.7	150 kcfs 18.7	June 7	
C	Yankton	20	25.1	150 kcfs n/a	June 14	
D	Sioux City	30	34.2	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	39.0	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	32.3	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	34.7	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	27.8	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	44.5	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	26.6	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	25.5	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	28.0	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	23.4	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

22 June 2011



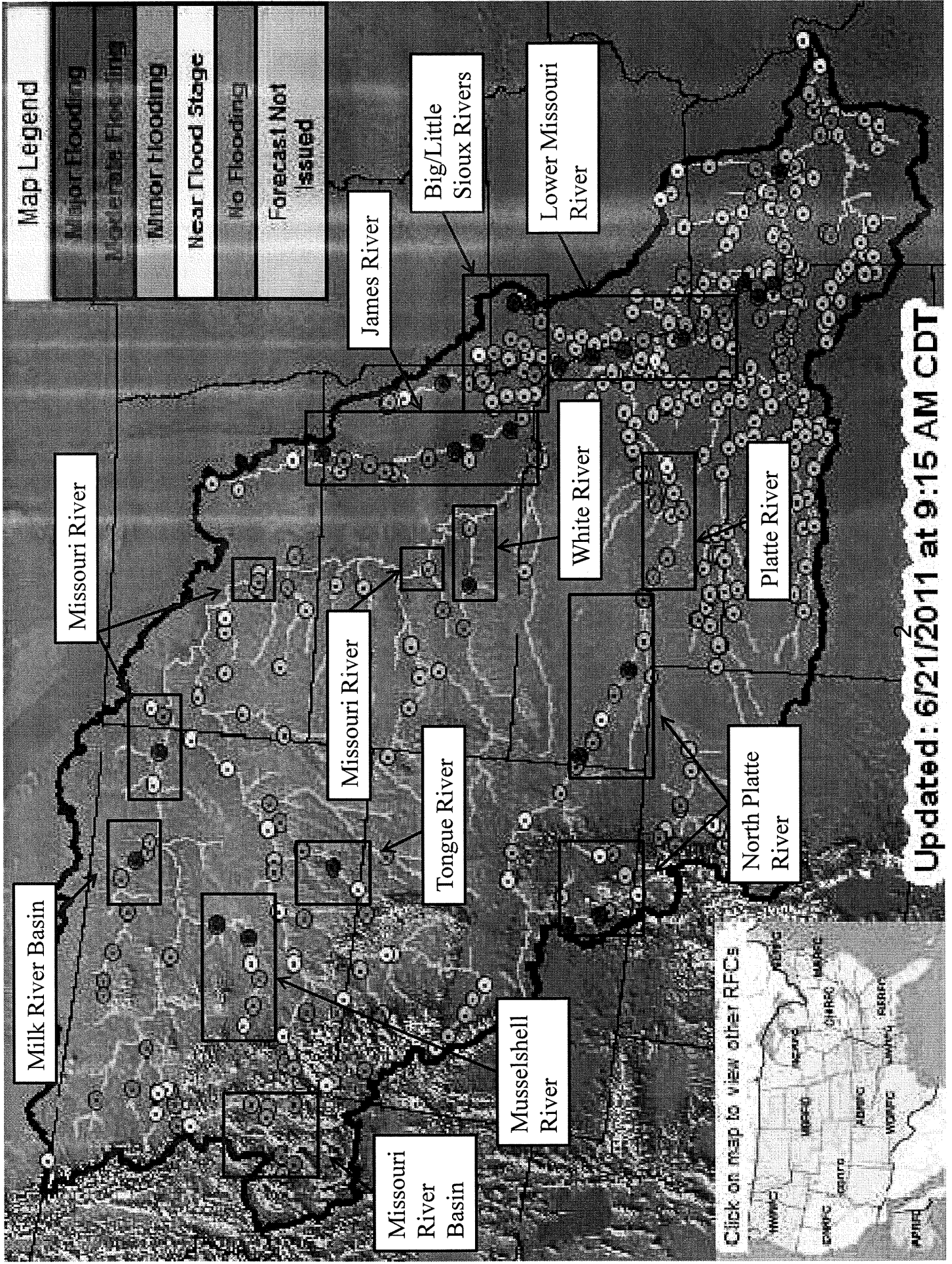
US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
N	Kansas City	32	26.5	220 kcfs 30 350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.2	220 kcfs 28 350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	na	220 kcfs 25 350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	24.9	230 kcfs 27 370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	23.1	235 kcfs 26 370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	na	250 kcfs 32 410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	22.1	260 kcfs 27 420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.6	260 kcfs 27 430 kcfs 35	June 19	38.3 (1993)
V	Chamais	17	17.9	290 kcfs 24 450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	23.9	300 kcfs 30 470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.7	300 kcfs 27 470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.4	300 kcfs 23 470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.8	300 kcfs 28 470 kcfs 37	June 20	40.04 (1993)

Flood CCIR Tracker

CCIR	DATE
State of SD – Request for technical assistance for the City of Oacoma; specifically requesting elevations and other technical assistance for a possible levee needed in the area, SD.	20 June 2011
Omaha District – Ft Randall Dam enters exclusive flood control pool	19 June 2011
State of NE – Request for Technical Assistance – Lake Waconda, Cass County, NE	19 June 2011
State of NE – Request for Direct Assistance – Missouri River Levee Unit R-562, Peru, NE	19 June 2011
Omaha District – Federal Levee Overtopping – Missouri River Levee Unit R-548 located south of Brownville, NE	19 June 2011
Omaha District - Federal Levee Overtopping - Missouri River Federal Levee - L-550 - Sponsor reported overtopping occurring in several locations north (upstream) of Highway 136 in Atchison County, MO.	19 June 2011
Omaha District – Big Bend employee pulled muscle in calf while walking up concrete wing wall – visiting doctor to determine extent of injury	16 June 2011
State of IA – Direct assistance for the Mills and Pottawattamie Missouri River District for emergency assistance and to install a reverse sand blanket at station 677+80, IA	16 June 2011
State of IA – Direct assistance to construct two seepage blankets and provide technical assistance team to City of Council Bluffs Public Works, IA	16 June 2011
State of SD – Technical assistance for the Dakota Dunes and Wynstone areas and other possible locations within Union County, SD	14 June 2011





Map Legend

Major Flooding

Moderate Flooding

Minor Flooding

Near Flood Stage

No Flooding

Forecast Not Issued

Milk River Basin

Missouri River

Missouri River Basin

Missouri River

Tongue River

James River

Big/Little
Sioux Rivers

Musselshell
River

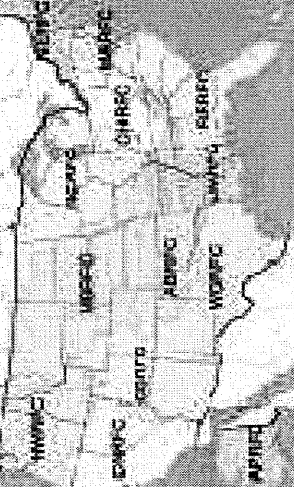
White River

Lower Missouri
River

North Platte
River

Platte River

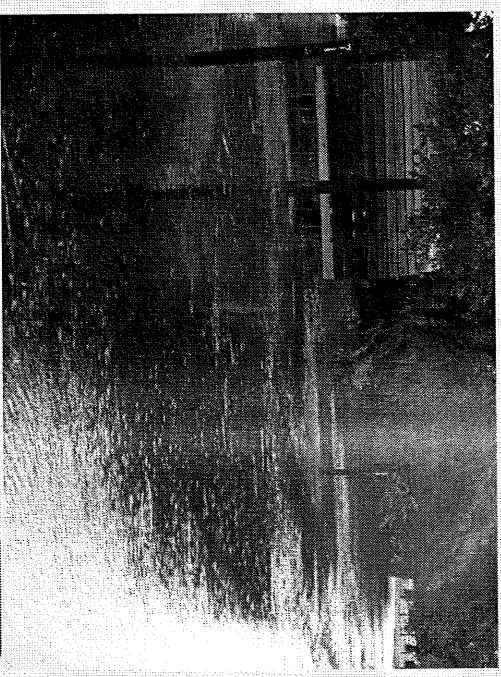
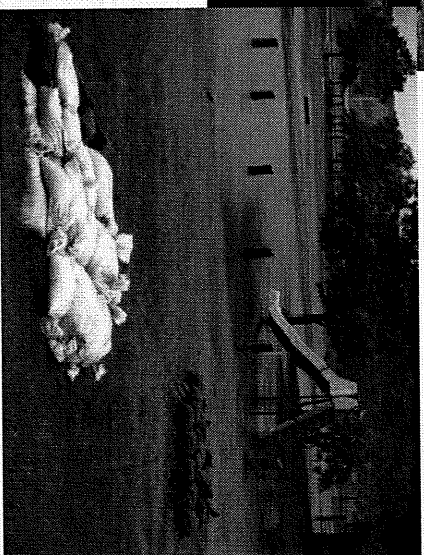
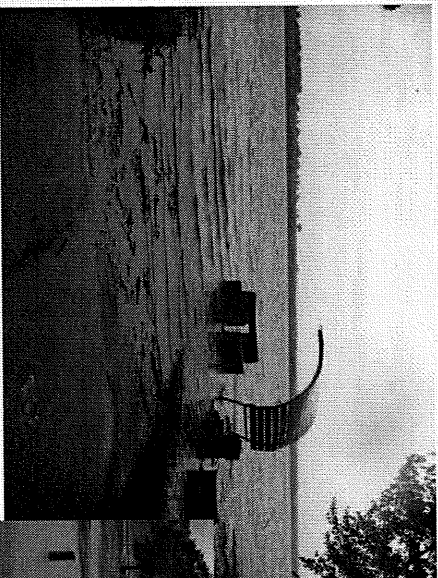
Click on map to view other RFCs



Updated: 6/21/2011 at 9:15 AM CDT

Big Bend Project

- Water is now entering the campground
 - ▶ We are sandbagging and removing equipment.
 - Campground will remain closed for the season.



*6 to come off mute

MR Levee Surveillance

- General
 - ▶ 7 Teams in the field today
 - ▶ 1 Team in the air
 - ▶ Teams continue to perform general surveillance and respond to areas of concern
 - ▶ Boils & seepage areas increasing and prevalent along system
- Significant Issues
 - ▶ Communications with CB
 - ▶ Erosion at L536
 - ▶ Water Near Crest at L601
 - ▶ Water Overtopping at L550



Omaha & Council Bluffs

- Omaha
 - ▶ No new issues. Teams continue to monitor previously identified issues.
 - ▶ Multiple items being worked by City (e.g., Syngenta sinkhole)
- Council Bluffs
 - ▶ Teams continue to monitor previously identified issues.
 - ▶ Single Point of Contact for City Issues
- MICA application currently has approximately 575 data points



Lake Wa Con-Da

- The larger boils have stopped moving material, with some of the smaller boils remaining active.
- Concerns with integrity levee section have been conveyed to levee Sponsor
- Sponsor continues to monitor situation.



*6 to come off mute

R562 - Peru

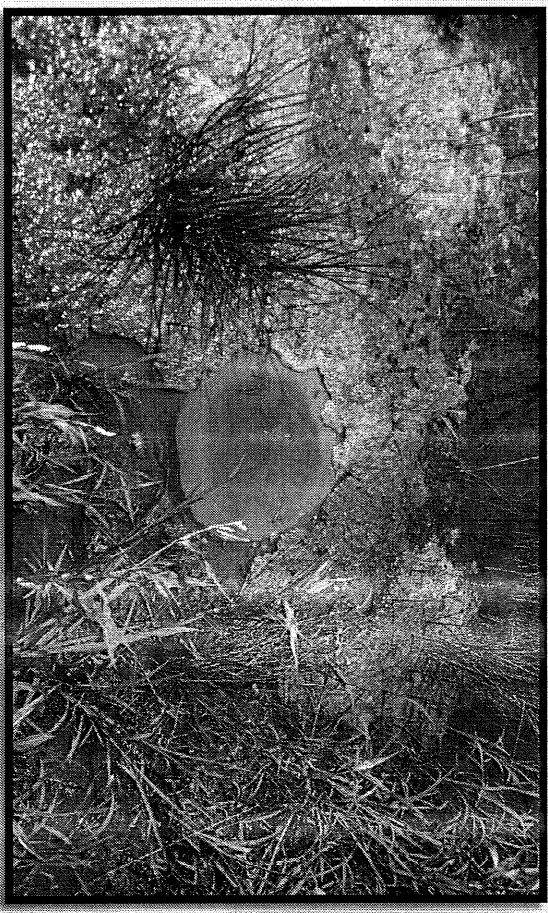
- At 1900 on 19 June team discovered burrow through levee directly above sheet pile
- ▶ Team and sponsor attempted to cover riverside hole with plastic, unsuccessfully
- As of 1145 on 20 June hole is under approximately 2' of head with a clear flow of 10 gpm
- **Revisiting Site Today**



*6 to come off mute

R-548 - Missouri River RB

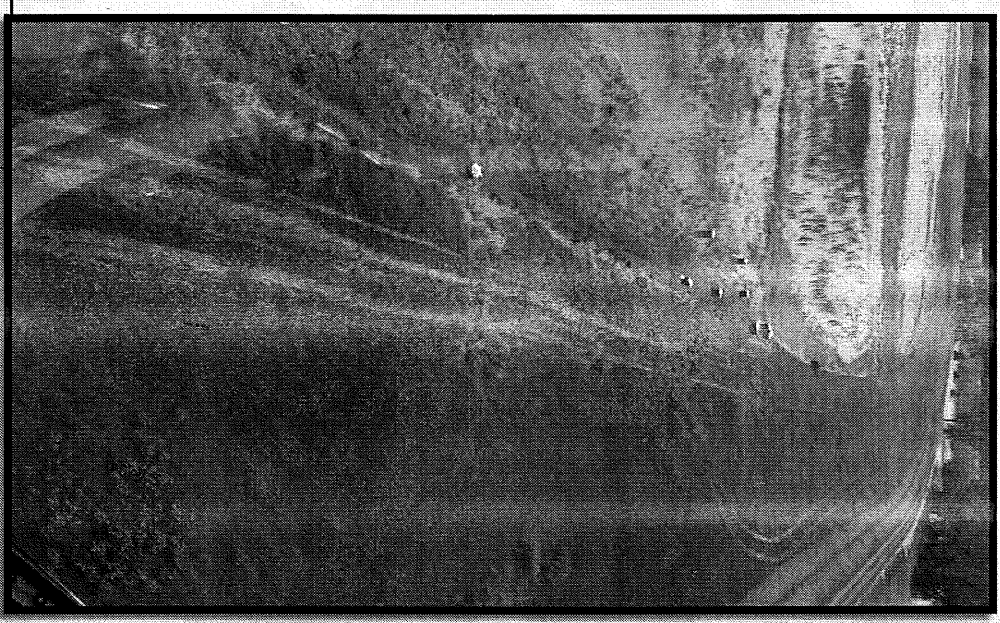
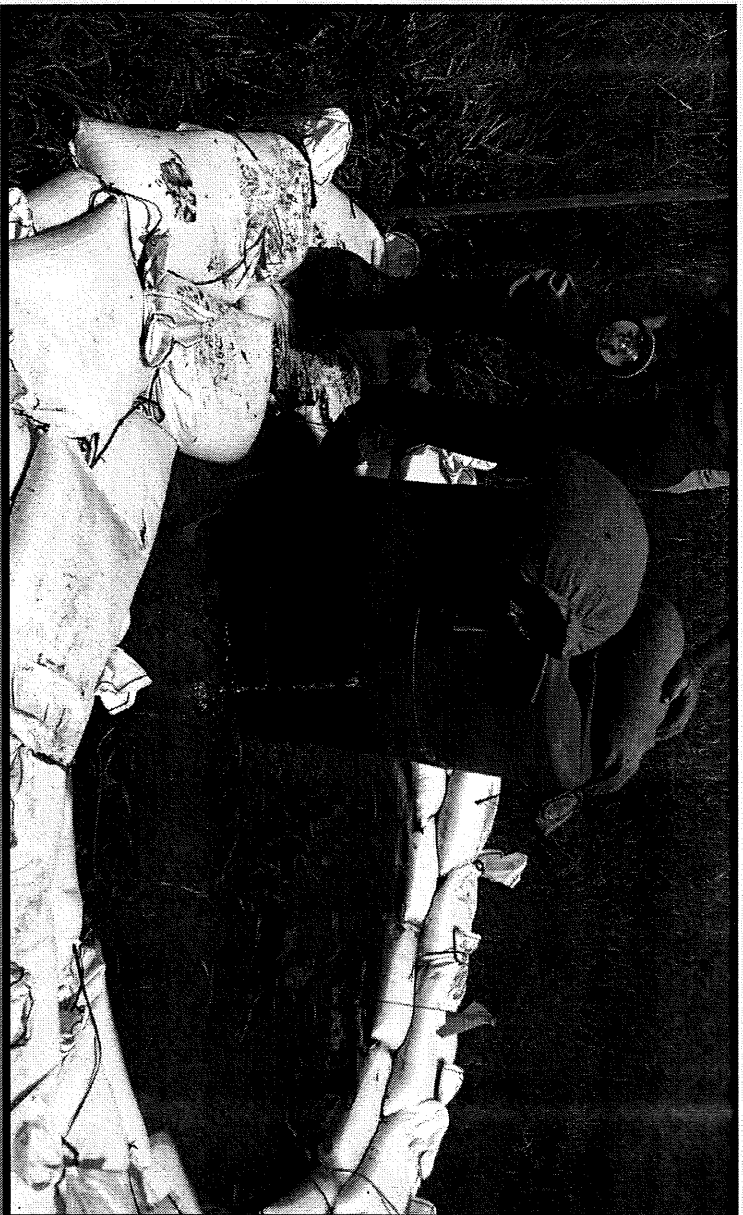
- Multiple areas, both north and south of the Cooper Nuclear Station, experienced water levels near the crest and a small section overtopped on 19 June
- Water levels dropped below crest. Sponsor is stockpiling sandbags and continuing to sandbag low spots.



*6 to come off mute

L-611-614 - MO River Left & Upper Pony Creek Ditch LB & Lateral 1B LB

**Request for Technical Assistance from
State to remediate Boil Field.**



***6 to come off mute**

[REDACTED]

From: Tom & Karla Waters [waters4@ix.netcom.com]
Sent: Wednesday, June 22, 2011 10:43 PM
To: McMahon, John R BG NWD
Cc: Farhat, Jody S NWD02
Subject: Master Manual
Attachments: Draft 05-06 AOP Info lq.pdf; ATT762323.htm

Importance: High

Dear General McMahon:

On Monday in Jefferson City, I briefly told you about a time in the past when the Corps of Engineers made changes to the Master Manual without a full blown review and update process. Tonight, I went back and found the attached information.

In the fall of 2005 during the 2006 AOP Public Hearings, the Corps used the AOP Hearings to also take comments on a supplement to the Master Manual. See the attached Corps Document signed by then Commander General Gregg Martin.

I believe the Corps of Engineers Northwestern Division should use the same process to make quick supplemental changes to the Master Manual which will provide more available storage for Flood Control in the reservoir system.

Please review the attached document and discuss it with your staff. The need for additional flood control storage is evident with today's flooding along the Missouri River. The Basin cannot afford to go through another 14-year multimillion dollar study. We need additional storage now, beginning with next year's AOP. I hope you will consider this quick option to make the changes the entire basin needs to better protect lives and property.

Thanks,
Tom



DEPARTMENT OF THE ARMY
NORTHWESTERN DIVISION, CORPS OF ENGINEERS
12565 WEST CENTER ROAD
OMAHA, NEBRASKA 68144-3869

REPLY TO
ATTENTION OF:

October 2005

This Draft Annual Operating Plan (AOP) presents pertinent information regarding water management in the Missouri River Mainstem Reservoir System (System) for the remainder of 2005 through February 2007. The information provided in this Draft AOP is based upon water management guidelines designed to meet the reservoir regulation objectives of the existing Missouri River Master Water Control Manual (Master Manual). This AOP also includes the implementation of a spring pulse, as required by the U.S. Fish and Wildlife Service's (USFWS) 2003 Amended Biological Opinion on the Operation of the System. The water control plan (WCP) in the Master Manual currently does not contain any technical criteria for a spring pulse. Therefore, if the final Corps of Engineers' (Corps) decision is to include spring pulse elements in the 2006 System regulation, the Master Manual will be supplemented prior to implementation of a spring pulse. A full description of the proposed spring pulse technical criteria, including its potential flexibility, has been provided as a separate document accompanying this Draft AOP.

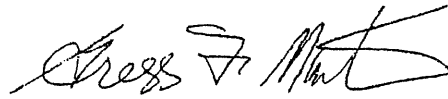
Comments on the spring pulse technical criteria and its proposed flexibility will be accepted, along with any comments on this Draft AOP. All comments will be fully considered prior to the final decision on the AOP and the supplement to the Master Manual for the spring pulse. The Corps will also prepare appropriate National Environmental Policy Act (NEPA) documentation.

The guidelines included in the existing Master Manual and the proposed spring pulse WCP technical criteria are applied to computer simulations of System regulation assuming five statistically derived inflow scenarios based on an analysis of water supply records from 1898 to 1997. This approach provides a good range of water management simulations for dry, average, and wet conditions. Computer simulation data with and without the spring pulse components are also presented to allow comparison. The AOP information provides a framework for the development of detailed monthly, weekly, and daily regulation schedules for the System's six individual dams during the upcoming year to serve its Congressionally authorized project purposes. System water management is provided by my staff at the Missouri River Basin Water Management Division, Northwestern Division, U.S. Army Corps of Engineers, located in Omaha, Nebraska.

Two additional documents will also be available by mid-2006 entitled, "System Description and Operation" and "Summary of Actual 2005 Regulation." To receive copies of those documents, you may contact the Missouri River Basin Water Management Division at 12565 West Center Road, Omaha, Nebraska 68144-3869, phone (402) 697-2676. Both reports will also be available at the "Reports and Publications" link on our web site at: www.nwd-mr.usace.army.mil/rcc.

Eight public meetings to discuss both this Draft AOP and the supplement to the Master Manual are scheduled as follows: November 14 in Omaha and Nebraska City, Nebraska; November 15 in Kansas City, Missouri; November 16 in St Louis and Jefferson City, Missouri; November 17 in Pierre, South Dakota and Bismarck, North Dakota; and November 18 in Glasgow, Montana. We ask that any comments be provided by December 1, 2005. The Final AOP is scheduled for publication in December 2005. Copies of the written comments and a report summarizing the comments received at the eight public meetings will be available upon request.

I thank you for your interest in the regulation of the System and look forward to your participation in this process.

A handwritten signature in black ink, appearing to read "Gregg F. Martin". The signature is stylized with a large, sweeping "G" and a distinct "M".

Gregg F. Martin
Colonel (Promotable), US Army
Division Engineer

Draft Spring Pulse Water Control Plan Technical Criteria

In December 2003, the U.S. Fish and Wildlife Service (USFWS) presented the Corps of Engineers (Corps) with its Amended Biological Opinion on the Operation of the Missouri River Mainstem System (System), Operation and Maintenance of the Missouri River Bank Stabilization and Navigation Channel, and Operation of the Kansas River Reservoir System (2003 Amended BiOp). That document presented the USFWS' opinion that the operation of the System would jeopardize the continued existence of the endangered interior least tern, threatened piping plover, and the endangered pallid sturgeon. The USFWS provided a Reasonable and Prudent Alternative (RPA) to avoid jeopardy to these species. For the endangered pallid sturgeon, the RPA included a provision that the Corps should develop a plan to implement a 'spring pulse' from Gavins Point Dam. The Missouri River Master Water Control Manual (Master Manual), which presents the water control plan (WCP) and operational objectives for the integrated regulation of the System, currently does not contain any technical criteria for a spring pulse.

The proposed spring pulse technical criteria are described below (Tables 1 & 2), including potential WCP flexibility (Table 3). Comments on these criteria will be accepted along with any comments on the Draft 2005-2006 Annual Operating Plan (AOP). All of those comments will be fully considered and integrated, if appropriate, into a supplement to the Master Manual and the Final 2005-2006 AOP. The Corps will also conduct Section 106 consultation, as provided for in the existing Programmatic Agreement and Government-to-Government consultations with the basin Tribes on the Master Manual supplement.

The spring pulse plan was developed based on the "Initial Starting Point" (ISP) presented in the 2003 Amended BiOp and input from the spring pulse Plenary Group and its technical working groups. These groups were involved in the recent spring pulse facilitated Tribal, State, and stakeholder process (spring pulse facilitated process) conducted by CDR Associates, a contractor for the U.S. Institute for Environmental Conflict Resolution. The purpose of this facilitated process was to develop a consensus approach on a Gavins Point Dam spring pulse plan. While the facilitated process did not develop a consensus approach, the Corps has utilized technical information from that process to develop the proposed WCP technical criteria for the spring pulse, which is set forth below.

TABLE 1
WCP TECHNICAL CRITERIA FOR SPRING PULSES
FROM GAVINS POINT DAM

Criteria Applicable to Both the March and May Spring Pulses

Flood Control Constraints	No change from current levels.
---------------------------	--------------------------------

Criteria Applicable to the March Spring Pulse

Drought Preclude	Initially 36.5 MAF or below measured on March 1 until this criteria results in a March spring pulse. Thereafter, 40.0 MAF or below measured on March 1.
Drought Proration of Pulse Magnitude*	None, 5 kcfs added to navigation releases, but no greater than 35 kcfs.
Initiation of Pulse	Extend the stepped System release increases that precede the beginning of the navigation season.
Rate of Rise before Peak	Approximately 5 kcfs for 1 day.
Duration of Peak	Two days.
Rate of Fall after Peak	Drop over 5 days to navigation target release.

Criteria Applicable to Time Period Between the Bimodal Pulses

Release	Existing Master Manual Criteria.
---------	----------------------------------

Criteria Applicable to the May Spring Pulse

Drought Preclude	Initially 36.5 MAF or below measured on May 1 until this criteria results in a May spring pulse. Thereafter, 40.0 MAF or below measured on May 1.
Proration of Pulse Magnitude Based On System Storage*	Prorated from 16 kcfs based on a May 1 System Storage check; 100% at 54.5 MAF; straight line interpolation to 75% at 40.0 MAF.

Criteria Applicable to the May Spring Pulse (Cont'd)

Proration of Pulse Magnitude Based On Projected Runoff*	After the proration of the spring pulse magnitude for System Storage, the resultant magnitude would be further adjusted either up or down based on the May CY runoff forecast; 100% for median; straight-line interpolation to 125% at upper quartile runoff; 125% for runoff above upper quartile; straight-line interpolation to 75% at lower quartile runoff; 75% for runoff below lower quartile.
Initiation of Pulse	Between May 1 to May 19, depending on Missouri River water temperature immediately below Gavins Point Dam. If possible, pulse will be initiated after the second daily occurrence of a 16 degree Celsius water temperature; however, the decision will be informed by the potential for 'take' of threatened and endangered bird species.
Rate of Rise before Peak	Approximately 6 kcfs per day.
Duration of Peak	Two days.
Fall Rate after Peak	Approximately 30% drop over 2 days, followed by a proportional reduction in releases back to the existing Master Manual Criteria over an 8-day period.

* Spring pulse magnitudes will be determined by taking the difference between pre-pulse Gavins Point releases and the peak pulse Missouri River flows measured just downstream of the mouth of the James River.

During the spring pulse facilitated process, many downstream stakeholders indicated that there should be downstream spring pulse flow limits that would decrease the chance of additional interior drainage flooding of agricultural land due to a spring pulse. They indicated that these downstream flow limits should be no higher than the existing downstream flood control constraints. The spring pulse downstream flow limits for this plan at Omaha, Nebraska City, and Kansas City, shown in Table 2, are equivalent to the minimum values (most protective) of the existing flood control constraints at those locations. Many spring pulse facilitated process participants also indicated that the Corps should use forecasted precipitation in its river flow forecast models to further protect downstream agricultural land from potential negative impacts associated with the spring pulse. Therefore, the Corps will include forecasted precipitation in the daily Missouri River forecast during the spring pulse implementation time period. If that

forecast indicates that these flow limits will be exceeded during the spring pulse time period, the Gavins Point release will be reduced accordingly to avoid exceeding those downstream flow limits.

TABLE 2
DOWNSTREAM SPRING PULSE FLOW LIMITS

<u>Location</u>	<u>Flow Limit (kcfs)</u>
Omaha	41
Nebraska City	47
Kansas City	71

TABLE 3
WCP FLEXIBILITY FOR SPRING PULSES

Flexibility Applicable to Both the March and May Spring Pulses

Downstream Flow Limits	Could be increased to no more than the "minimally increased" flood control targets identified by the Corps during the spring pulse facilitated process. The associated downstream flow limits would be 49 kcfs at Omaha, 55 kcfs at Nebraska City and 75 kcfs at Kansas City.
------------------------	---

Flexibility Applicable to the March Spring Pulse

Duration of Peak	Could be increased to no more than 5 days.
------------------	--

Flexibility Applicable to the May Spring Pulse

Rate of Rise before Peak	Could be decreased to no less than 4 kcfs per day and increased to no more than 8 kcfs per day.
Duration of Peak	Could be increased to no more than 5 days.
Rate of Fall after Peak	While maintaining the approximately 30% drop over 2 days, the tail of the spring pulse hydrograph could be extended to 14 days.
Use of James River Target	When not required as a drought conservation measure, the magnitude of the spring rise could be measured at Gavins Point Dam rather than below the confluence with the James River.

The WCP flexibility, presented in Table 3, is designed to facilitate the adaptive management process. It will not be exercised until it is determined that this flexibility is necessary to meet the life history needs of the pallid sturgeon. In addition to comments received on this WCP technical criteria and the 2005-2006 AOP, the Corps will also participate with States, Tribes, and stakeholders in forums conducted by the U.S. Institute for Conflict Resolution related to the spring pulse issue. This includes the current Spring Pulse Plenary and its technical working groups or their eventual successors within the Missouri River Recovery Implementation Committee (MRRIC). The States, Tribes, stakeholders, and general public will be afforded ample opportunity to comment on the WCP flexibility prior to implementation.

The National Environmental Policy Act (NEPA) process was followed for the recent revision of the Missouri River Master Water Control Manual (Master Manual). That NEPA process culminated in a Record of Decision dated April 19, 2004. The Missouri River Master Water Control Manual Revised Draft Environmental Impact Statement published in August 2001 and the Master Manual Final Environmental Impact Statement, published in March 2004, presented impacts to key river uses and resources associated with a spring pulse operation for several alternatives. An Environmental Assessment will be completed prior to the supplementation of the Master Manual to determine if impacts associated with the implementation of the spring pulse WCP technical criteria, including those associated with the WCP flexibility described above, are within the range of impacts analyzed for those alternatives, or whether an Environmental Impact Statement should be prepared for these changes.

[REDACTED]

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 7:01 PM
To: DLL-CENWO-EOC CMT-ALL
Cc: CENWD-EOC NWD; [REDACTED] NWO
Subject: Flood Update #98 (UNCLASSIFIED)
Attachments: NWO Flood Fight Materials 21 Jun.xlsx; Missouri River Basin Water Management Situation Report 6-22-11.docx; tempoutlook22_june.xls; PrecipReports22.xls; 24hrPrecip-22.jpg; Day3QPF-22.gif; Day2QPF-22.gif; Day1QPF-22.gif; ObservedPrecip_21Jun2011.jpg; Day1QPF_22Jun2011.gif; Day2QPF_22Jun2011.gif; Day3QPF_22Jun2011.gif; PrecipReport_21Jun11.xls; TempOutlook_21Jun11.xls; DailyBulletin_22Jun2011.pdf; MainStemBulletin_22Jun2011.pdf; MR_Levee_Freeboard_062211.pdf; BlkHwk.jpg

Classification: UNCLASSIFIED

Caveats: FOUO

****EMERGENCY OPERATIONS****

1. Situation:

The past 24 hour past precipitation brought the strong low pressure system that brought widespread heavy rain to much of the Missouri River Basin Monday moved into eastern South Dakota Tuesday. Rainfall was again widespread around this low, but focused the heaviest rainfall north and west of the low center, mainly from central South Dakota into southeast North Dakota. Rainfall of 1 to 2 inches were common from near Fort Pierre through southeast North Dakota, with isolated amounts over 3 inches. To the south, rainfall around a half inch was common across eastern Nebraska, western Iowa and southeast South Dakota. To the northwest, central and western North Dakota averaged a tenth of an inch or less. Higher totals of a quarter to a third of an inch fell in eastern Montana.

Some of the higher specific totals included: Fullerton ND 3.63", Aberdeen 1NNE SD 1.64", Sisseton 10ENE SD 2.06, Pierre SD 1.32", Denison 5ESE IA 0.94". A list of precipitation reports is attached.

160,000 cfs inundation maps have been posted.

2. Weather:

2.a. Future Precipitation:

Day 1 QPF (from 700 hours Wednesday to 700 hours Thursday): The low pressure system will move east of the Basin by Thursday morning. Lingering showers could drop a 0.25" rains in eastern South Dakota. The rest of the Basin will be dry. See attached.

Day 2 QPF (from 700 hours Thursday to 700 hours Friday): Another low pressure system will begin moving through the northern Rockies through Friday morning. Scattered showers and thunderstorms will affect eastern Montana with 0.25" to 0.75" rains. Also, a warm front in the southern plains will begin moving north, sparking thunderstorms in southern Kansas and Missouri. Some of this activity could drop 0.25" rainfall just south of the Kansas City metro. See attached.

Day 3 QPF (from 700 hours Friday to 700 hours Saturday): The combination of the low pressure system moving out of the northern Rockies and the warm front lifting north from the southern plains will produce widespread 0.50" to 1.00" rains from central South Dakota through central and eastern Nebraska into eastern Kansas. Much of the Basin can expect rainfall of 0.25". See attached.

2.b. Temperature forecast:

Forecast high temperatures for Montana and Wyoming will surge to 5 to 10 degrees above normal ahead of a low pressure system on Thursday, averaging the upper 70s to upper 80s. Temperatures of 5 to 10 degrees below normal are expected Friday behind the low, with highs in the upper 60s to upper 70s. Near normal temperatures are then expected Saturday through Monday, with a warming trend forecast Tuesday. See attached.

Winds Impacts:

Fort Peck: South winds 5 to 10 mph today, becoming southeast tonight at 5 to 10 mph.

Southeast winds 15 mph, gusting to 25 mph, on Thursday.

Williston: North winds 5 to 15 mph today, becoming easterly tonight. Winds becoming southeast 10 to 20 mph Thursday.

Garrison: North winds 15 to 25 mph today, decreasing to 5 to 15 mph late tonight. On Thursday, light winds in the morning will become southeast 5 to 10 mph.

Oahe: Northwest winds 25 to 35 mph through the early evening, then decreasing to 15 to 25 mph by late evening. Winds will die down late tonight to 5 to 10 mph. On Thursday, north to northwest winds will average 5 to 10 mph.

Gavins Point: Northwest winds today averaging 20 to 30 mph with gusts to 35 mph. The northwest winds will decrease to 10 to 20 mph by late evening, then to 5 to 10 mph late tonight. On Thursday, Northwest winds will increase to 10 to 20 mph by early afternoon.

Sioux City through Rulo: Northwest winds today averaging 15 to 25 mph with gusts to 35 mph. Northwest winds will decrease to 10 to 20 mph by midnight. On Thursday, northwest winds 15 to 25 mph.

3. Hydro Status:

3.a. River (Flood Stage/Current Stage/Forecast/Date of Peak: Peak Stage) Montana

- * Yellowstone River at Billings/13.0/9.68/steady, then rising/Jun 25: 12.6'
- * Yellowstone River at Forsyth/10.0/9.23/steady, then rising/Jun 27: 11.8'
- * Yellowstone River at Miles City/13.0/11.79/steady, then rising/Jun 26: 14.2'
- * Yellowstone River at Glendive/53.5/50.83/steady/
- * Yellowstone River near Sidney/19.0/15.81/receding/
- * Gallatin River near Logan/8.0/8.14/steady, then rising/Jun 25: 9.0'
- * Missouri River near Toston/10.5/10.11/steady, then rising/Jun 25: 10.6'
- * Missouri River near Wolf Point/13.0/13.58/steady/
- * Missouri River near Culbertson/19.0/16.78/steady, then slow recession/
- * Milk River at Nashua/20.0/23.63/receding/

Wyoming

- * North Platte River at Saratoga/8.5/9.61/steady/
- * North Platte River nr Sinclair/9.0/10.26/steady/
- * Laramie River at Laramie/5.0/5.47/steady/

North Dakota

- * Missouri River at Williston/22.0/30.52/steady, then slight recession/
- * Missouri River at Bismarck/16.0/18.92/steady/
- * James River at Jamestown/12.0/11.32 (1,740 cfs)/steady/

South Dakota

- * Missouri River at Pierre/13.0/19.65/steady/
- * Missouri River near Greenwood/30.0/37.72/steady/
- * Missouri River near Gayville/55.0/56.21/steady/

* Bad River at Fort Pierre/21.0/21.95/receding/

* White River Near Oacoma/15.0/15.85/cresting/

Iowa

* Big Sioux River at Akron/16.0/17.54/rising/Jun 24: 19.2'

* Nishnabotna River near Hamburg/23.0/22.73/cresting/

Nebraska

* North Platte River near Mitchell/7.5/9.13/steady/

* North Platte River at North Platte/6.0/7.68/cresting/June 22: 7.7'

* Missouri River at Sioux City/30.0/34.13/rising/Jun 26: 34.7'

* Missouri River at Decatur/35.0/39.01/rising/Jun 26: 39.3'

* Missouri River near Blair/26.5/32.37/rising/Jun 22: 32.5'

* Missouri River at Omaha/29.0/34.72/cresting/

* Missouri River at Plattsmouth/26.0/35.81/cresting/

* Missouri River at NE City/18.0/27.86/cresting/

* Missouri River at Brownville/33.0/44.52/rising/Jun 22: 44.6'

* Missouri River at Rulo/17.0/26.65/rising/Jun 22: 26.8'

3.b. Reservoirs:

Tributary Reservoirs:

Pipestem Reservoir, (ND) - fell 0.07' to elevation 1482.89 ft-msl. Inflows are near 170 cfs and releases are 600 cfs. 60.4% of the flood pool is occupied.

Jamestown Reservoir, (ND) - rose 0.22' yesterday to elevation 1443.72 ft-msl. Inflows are approximately 180 cfs. Releases were increased from 1,100 cfs to 1,200 cfs at 8:30 pm on June 22 as the threat of heavy rainfall has diminished. The combined Jamestown/Pipestem release is 1,800 cfs. 38.4% of the flood pool is occupied.

Heart Butte, (ND) - Reservoir fell 0.01 ft yesterday with 4.2% of its flood control pool occupied. Pactola (SD) rose 0.18 ft yesterday with 3.0% of the flood pool occupied. Shadehill (SD) fell 0.05 ft yesterday with 2.5% of the flood pool occupied.

Yellowtail, (MT) - rose 0.27 ft to elevation 3637.39 ft-msl with inflows of 16,985 cfs and releases of 15,392 cfs. 92.4% of its multipurpose pool is occupied.

Tiber, (MT) - rose 0.34 ft to elevation 3006.18 ft-msl. Inflows were 4,434 cfs and releases are 758 cfs as the USBR stores water to help reduce inflows to Fort Peck. 64.9% of its flood pool is occupied.

Clark Canyon, (MT) - rose 0.29 ft to elevation 5551.70 ft-msl with inflows of 1,306 cfs and releases of 290 cfs as the USBR stores water to help reduce inflows to Fort Peck. 37.5% of its flood control pool is occupied.

Canyon Ferry, (MT) - rose 0.50 ft to elevation 3796.63 ft-msl with inflows of 25,227 cfs and releases of 16,694 cfs. 99.3% of its multipurpose pool is occupied.

Glendo, (WY) - rose 0.14 ft to elevation 4639.12 ft-msl with inflows of 8,686 cfs and releases of 7,603 cfs. 19.3% of its flood control pool is occupied.

Missouri River Mainstem Reservoirs: (Water Management SITREP is attached) Following is a link to the Mainstem regulation forecast. Refresh to obtain the most recent copy if you keep this link open. <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>. Notes for data

below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/21 Pool Elev: 2251.8 ft-msl

24-hr change: -0.1'

6/21 Ave Inflow: 47,000 cfs

6/21 Ave Release: 60,200 cfs

6/22 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/21 Pool Elev: 1854.3 ft-msl

24-hr change: 0.2'

6/21 Ave Inflow: 192,000 cfs

6/21 Ave Release: 150,400 cfs

6/22 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/21 Pool Elev: 1619.3 ft-msl

24-hr change: 0.4'

6/21 Ave Inflow: 218,000 cfs

6/21 Ave Release: 153,900 cfs

6/22 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/21 Pool Elev: 1421.0 ft-msl

24-hr change: 1.1'

6/21 Ave Inflow: 195,000 cfs

6/21 Ave Release: 162,900 cfs

6/22 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/21 Pool Elev: 1368.0 ft-msl

24-hr change: 1.7'

6/21 Ave Inflow: 213,000 cfs

6/21 Ave Release: 139,600 cfs

6/22 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/21 Pool Elev: 1208.1 ft-msl

24-hr change: 0.7'

6/21 Ave Inflow: 159,000 cfs

6/21 Ave Release: 150,900 cfs

6/22 Scheduled Release: 155,000 cfs

4. Emergency Operations:

4.a.1 Nebraska

Knox County, NE - USACE Omaha District will be supplying the NDOT 100 - 1 Ton super sacks for protection of the intersection of US Highway 12 and Spur 54D to provide access to Village of Santee.

4.a.2 Montana

Ft. Peck Dam - Continuing to monitor scour along the length of the wing wall.

4.a.3 North Dakota

Williston, ND - USACE personnel continuing to work with the City of Williston.

Garrison Dam, ND - The Garrison Project is attempting to energize unit #5, if this is successful they will be able to pass more flow through the power house. No other significant dam safety issues to report.

Fort Yates, ND - Standing Rock Sioux Tribe (SRST): No Change

4.a.4 South Dakota

Pierre/Ft. Pierre, SD - Increase in tail water surface elevation due to increase discharge (150K to 160K cfs). The City of Ft. Pierre requested two additional pumps. One of the pumps that the City of Pierre had was sent to Ft. Peck this afternoon. No other significant issues to report.

Dakota Dunes, SD - Continuing to monitor erosion along South levee, the sponsor has armored the levee slope with rip-rap to mitigate erosion damage.

Oahe Dam, SD - The relief well road remains closed due to high water (160K flows).

Big Bend Dam, SD - Service road to relief wells is still under water (160K flows).

Fort Randall Dam, SD - The repair of concrete slab spalling work was completed 21 June 2011 as reported. This work is being completed by project personal.

Oacoma, SD - Geotechnical branch personnel visited Oacoma today on their way from Big Bend to Fort Randall. They looked at the city's sewage lagoons due to concerns with erosion from high lake levels and their effect on the berms. It was reported that there would not likely be much erosion due to trees blocking the waves and very good vegetative cover on the berms. The city saw water on the berms in 1997 when the lake was at 1372.2 and they didn't have any issues at that time.

The city received detailed survey information yesterday from Banner and Associates. They have suggested that their citizens build protection to elevation 1380. The latest forecast for July 15th projects a lake level of 1373. The Chamberlain/Oacoma area typically is 1 - 2 feet higher than at the dam. Engineering is working on providing a wave height estimate for the area.

4.a.5 Wyoming

NSTR

4.a.6 Iowa/Missouri

Sioux City:

Due to recent rain the contractor is placing additional rock on low point on access road. The additional rock work will begin tomorrow.

Pottawattamie County (L624-627):

USACE is continuing to work the direct assistance for the reverse filter blanket along areas on the MR Levee L624-627. USACE personnel along with the City of Council Bluffs performed a site walk today to finalize scope of work.

Monona County:

USACE received a technical assistance request from the State of Iowa today for the City of Onawa. The City of Onawa in Monona County is exploring options to protect critical infrastructure in the city, to include possibly constructing a dike to protect infrastructure from rising flood waters, and wish to consult with the USACE expertise on the matter. Monona County also swapped out a 12" for 16" pump.

Mills County (L611-614):

Currently stockpiling material, will resume work as soon as the area dries out enough to safely operate heavy equipment traffic on site.

Hamburg Levee:

Not able to resume dirt work yesterday due to the wet/muddy conditions, however resumed dirt work this morning. Currently have 7 scrapers going and expect to add another 3 today as conditions continue to improve. Scrapers currently running north to active boil area - we may be able to start dirt working west to the active boil area on the north side of segment one. In other words; converge on the active boil area from two sides. Will resume 24/7 op's provided the site does not get any additional rain. Have a 30 man crew on today to address the poly that was damaged (mostly on Segment 3) in Monday night's storm.

Coordinating Nishnabotna(L-575 tieback) levee raise with sponsor today. Sponsor is providing material. Expect to start work tomorrow.

Atchison County, MO - USACE personnel attended a meeting with MDOT and Atchison County to discuss Hwy 136 and possible reopening.

4.a.7 Missouri Levee River Surveillance Multiple teams comprised of Omaha District and out-of-District staffs continue to coordinate with local sponsors on any issues/concerns they may have, as well as conduct surveillance on levee conditions. Seepage areas/boils have been observed along the levees. Teams have been providing assistance to Sponsors when seepage areas/boils and other actionable items are observed.

Omaha-Missouri River RB:

Eppley Airfield is in the process of installing a number of wells in attempt to draw down the water table. The inverted filter approximately 0.5 miles north of the I-80 overpass is being cut down and widened, perpendicular to the levee, in response to additional boils developing at the toe of the filter.

L624-627/614/611-Mosquito Creek and Upper Pony Creek:

The Corps is currently involved in the development of inverted filter contracts with the City of Council Bluffs.

L611/614-MoRiver LB & Upper Pony Creek Ditch LB:

The Sponsor has plugged a gate that had been stuck open with large sandbags. Upon inspection, field crews have suspicions that an adequate seal may not have been made, as air can be heard filtering through the pump. The sponsor is being contacted on the issue. Significant areas of seepage and boil activity continues. Work on the inverted filter placement continues.

L601/594:

Water was on crest of levee in 4 areas yesterday. Up to approximately 1 foot of freeboard at low areas today (above levee high point). Sponsor sandbagging low areas for approximately 725 feet.

L575-BW,McKissock, Buchanan, Atchison, Hamburg:

Levee Surveillance Training of AmeriCorps volunteers is tentatively scheduled for 30 June. On 6/22, Ditch 6 - The levee shows approximately 5 ft of freeboard at 1100.

L550/561-Missouri River LB:

National Guard completed sandbag placement on crest via helicopter in overtopping in some of the areas upstream of HWY 136. Levee still overtopping today. Sponsor reported water flowing from holes on landward slope last night with the water flowing clear. Sponsor will continue to monitor.

L536/550-Turkey Creek:

Erosion into Mill Creek tie-back continues at a slow rate. Turbulent flow has moved further away from the levee. Sponsor has indicated that they will request assistance to place large sand bags against the face of the erosion scarp to attempt to minimize further erosion. The Corps supports this action. The remainder of the levee system appears to be in good condition.

R616/613-MO River RB and Papillion Creek LB:

As of 1230, 6-22 - the levee showed approximately 4.5 ft of freeboard. After further investigation of the Papio Water Treatment Plant, it is the opinion of the field crew that the source of the seepage in question may be interior drainage. City was informed of finding.

R613-Platte LB and Papillion RB and MO River RB:

The Corps has received a request for both technical and direct assistance from Lake Waconda. The Corps informed that State that the Corps can provide technical, but not direct assistance.

R573-MO River RB:

Gary Rule, OPPD, requested the team stop in daily if possible, to review their activities.

R562-Peru:

Sloughing was observed along riverside section of the levee. County Emergency Management was contacted, and responded rapidly, laying rip-rap over the area. The levee shows approximately 6" of freeboard to the crest of the levee in low areas, which was raised to approximately 1' when you include sandbags that have been placed atop the crest.

R548- MO River and Little Nemaha:

Water at crest of levee. Sponsor & Cooper Nuclear Station personnel continue to sandbag levee crest.

4.b Equipment:

Sandbags

Issued: 14,637,000

On-Hand: 6,923,500

Projected: 6,500,000

HESCO 3'

Issued: 8,200 LF

On-Hand: 9,000 LF

Projected: 10,000 LF

HESCO 4'

Issued: 66,070 LF

On-Hand: 26,700 LF

Projected: 25,000 LF

Poly Rolls

Issued: 2,836 rolls

On-Hand: 1,987 rolls

Projected: 1,500 rolls

Pumps

Issued: 48

On-Hand: 9

Serviceable: 8

Projected: 15

Additional Supplies due in

Pumps: 2 x 8" diesel pumps and 1 x 16' PTO pump available.

Pumps: 1 x PTO pump awaiting parts/repair.

Pumps: 5 x PTO pumps "on-hold" for emergency response.

Sling Bags: 1,025 ea. 2,000 lb w/slugs on-hand.

Heavy Bags: 6,420 ea. (35x35x35) on-hand now.

GeoTextile: 4 rolls (15'x300') on-hand.

4.c Funding:

- * Total Code 200 Funding received to date for this event: \$46,662,425
- * Total Code 200 Funding waiting to be received for this event: \$0
- * Total Code 200 Funding revoked to date for this event: \$4,584,000
- * Class 219 - Emergency Operations - Direct Assistance - \$250,000 - WAD and FAD received 3/14/2011
- * Class 219 - Emergency Operations - Direct Assistance - \$3.825M - WAD received 03/15/11. FAD received 03/16/11.
- * Class 219 - Additional Funds Request on 24 March - \$231,425 - WAD and FAD received 03/24/11.
- * Class 219 - Emergency Operations - Direct Assistance - \$2.5M revoked - 4/13/11
- * Class 219 - Emergency Operations - Direct Assistance - \$100k revoked - 4/22/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$56k - MIPR - 4/30/11 - received \$45k on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$25k - Request and received for EOC Operations and deployments on 4/30/11
- * Class 210 - Response Operations - Alabama Tornadoes - \$14k revoked - 05/02/2011
- * Class 210 - Response Operations - Alabama Tornadoes - \$10k revoked - 05/03/2011
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - WAD and FAD received on 05/25/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - WAD and FAD received on 05/26/11
- * Class 200 - Emergency Operations - Response Operations - \$5,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - FAD received 05/27/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/27/11 - WAD received for \$2M received on 05/31/11 - verbal received on 06/04/11 for \$1M
- * Class 200 - Emergency Operations - Response Operations - \$10,000,000 - request sent 05/28/11 - WAD received on received 05/28/11
- * Class 200 - Emergency Operations - Response Operations - \$3,000,000 - request sent 05/31/11 - WAD received 06/01/11
- * Class 200 - Emergency Operations - Response Operations - \$6,500,000 - request sent 06/01/11 - WAD for \$3M received 06/02/011 - verbal received on 06/04/11 for \$3.5M
- * Class 200 - Emergency Operations - Response Operations - \$1,500,000 - request sent 06/03/11 - verbal received 06/03/11
- * Class 200 - Emergency Operations - Response Operations - \$1,000,000 - request sent 06/03/11 - verbal received 06/03/11 - WAD received 06/06/11
- * Class 200 - Emergency Operations - Response Operations - \$500,000 - request sent 06/04/11 - verbal received 06/04/11
- * Class 200 - Emergency Operations - Response Operations - \$2,000,000 - request sent 06/05/11 - verbal received 06/05/11
- * Class 200 - Emergency Operations - Response Operations - \$400,000 - request sent 06/06/11 - verbal received 06/07/11
- * Class 200 - Emergency Operations - Response Operations - \$50,000 - received 06/08/11
- * Class 200 - Emergency Operations - Response Operations - \$980,000 - request sent 06/08/11 - WAD received 06/09/11
- * Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/09/11 - WAD received 06/10/11

* Class 21M - Emergency Operations - Response Operations - \$210k revoke request sent 06/10/11
* Class 21M - Emergency Operations - Response Operations - \$1,000,000 revoke request sent 06/17/11
* Class 200 - Emergency Operations - Response Operations - \$750,000 - request sent 06/17/11 - verbal received 06/18/11
* Class 219 - Emergency Operations - Response Operations - \$750,000 revoke request sent 06/21/11

* Total Code 500 Funding received to date: \$827,904
* Class 520 Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/2/11.
* Class 52A Additional Request for Funding - Advance Measures - Technical assistance - \$100K. WAD and FAD received on 3/10/11.
* Class 520 Additional Request for Funding - Advance Measures - Technical assistance - \$101,640. WAD and FAD received on 3/24/11.
* Class 519 Funding - Advance Measures - Direct Assistance - \$376,264. WAD and FAD received on 3/28/11.
* Class 520 Funding - Advance Measures - Technical assistance - \$110k - FAD received on 05/12/11.
* Class 510 Funding - Advance Measures - Direct assistance - \$40k - FAD received on 05/26/11

Daily Labor Burn Rate: \$137,500
Daily Contract Burn Rate: \$200,000
Combined Daily Burn Rate: \$337,500

4.d Number of Personnel Supporting EOC Operations:

Working in field: 50
Working in District: 50
Outside District: 2

5.a EOC Activation - Level IV - 24 hour Activation (Shifts: 0700-1930)

[REDACTED]
Chief, Readiness Branch
U.S. Army Corps of Engineers - Omaha District
1616 Capitol Ave., Ste 9000
Omaha, NE 68102
[REDACTED] Office
[REDACTED] Blackberry
[REDACTED]@usace.army.mil

Classification: UNCLASSIFIED
Caveats: FOUO

170021JUN11

SANDBAGS	3' HESCO	4' HESCO	POLY ROLLS	PUMPS
ISSUED:	14,637,000	8,200	2,836	48
ON HAND:	6,923,500	9,000	1,987	8/9
PROJECTED REQTS:	6,500,000	10,000 LF	25,000 LF	15

Serviceable / On Hand

Notes

1. Pumps: 2 x 8" diesel pumps & 1 x 16" PTO pump available.
2. Pumps: 1 x PTO pump awaiting parts/repair.
3. Pumps: 5 x PTO pumps "on-hand" for emergency response.
4. Slingsbags: 1,025ea 2,000 lb w/ slings on-hand.
5. Heavybags: 6,420ea (35x35x35) on-hand now.
6. GeoTextile: 4 rolls (15' x 300') on hand.

Missouri River Basin Water Management Situation Report – 6-22-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck and Garrison passing their spillway crest (continuing up on raised spillway gates) and Oahe being near its spillway crest. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Garrison and Oahe Reservoirs will likely continue. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/22/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	47.0	60.2	2250	2251.8	-0.1
Garrison	192.0	150.4	1854	1854.3	0.2
Oahe	218.0	153.9	1620	1619.3	0.4
Big Bend	195.0	162.9	1423	1421.0	1.1
Fort Randall	213.0	139.6	1375	1368.0	1.7
Gavins Point	159.0	150.9	1210	1208.1	0.7

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and has gone into surcharge. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. The stored water has entered further into the exclusive flood control zone of Fort Randall, and has entered the exclusive flood control zone of Gavins Point. At Big Bend, 100 percent of the exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/22/11)

Reservoir	Current kAF	Total kAF	Remaining kAF	Exclusive kAF	% Excl Left
Fort Peck	18,910	18,463	-447	971	-46
Garrison	23,948	23,821	-127	1,489	-9
Oahe	22,815	23,137	322	1,102	29
Big Bend	1,677	1,798	121	60	100
Fort Randall	4,698	5,418	720	985	73
Gavins Point	397	450	53	57	93

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Big Bend will be further increased to 165,000 cfs to gain storage space at Garrison and Oahe reservoirs. Releases from Fort Randall and Gavin's Point reservoirs will also be increased to 157,000 cfs and 160,000 cfs respectively to gain storage space in Oahe and Garrison reservoirs. . Releases from Fort Peck have been reduced as inflows continue to decline. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/22/11)

Reservoir	Yesterday kcfs	Forecast Today kcfs	7 days out 29 June kcfs	14 days out 06 July kcfs	Pre-2011 Record kcfs
Fort Peck	60.2	60	60	55	35
Garrison	150.4	150	150	150	65
Oahe	153.9	150	160	160	59
Big Bend	162.9	165	165	160	74
Fort Randall	139.6	138	157	157	67
Gavins Point	150.9	155	160	160	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/22/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.9	20.6	mid-Jun
Pierre, SD	13	19.7	18.7	mid-Jun
Sioux City, IA	30	34.2	35-37	mid-Jun thru July
Decatur, NE	35	39	40-42	mid-Jun thru July
Omaha, NE	29	34.7	34-36	mid-Jun thru July
Nebraska City, NE	18	27.8	27-28+	mid-Jun thru July
St. Joseph, MO	17	25.5	27-32	mid-Jun thru July
Kansas City, MO	32	26.5	30-39	mid-Jun thru July
Waverly, MO	20	24.9	27-31	mid-Jun thru July
Boonville, MO	21	22.1	27-33	mid-Jun thru July
Hermann, MO	21	21.7	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still below the constructed levee crests.

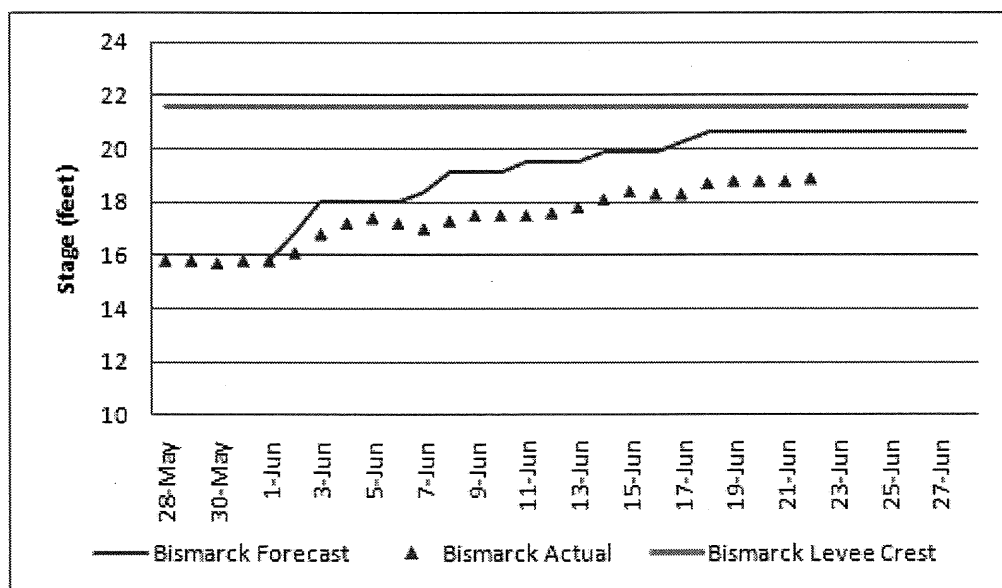


Figure 1. Missouri River stages at Bismarck, North Dakota.

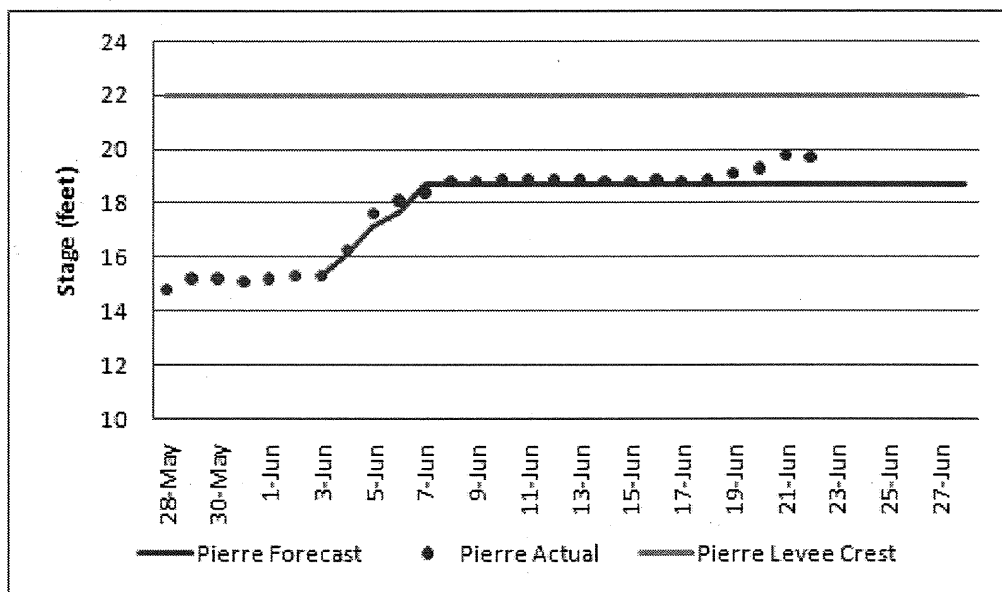


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast was prepared on June 20; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 21 mountain snowpack updated by the Corps.

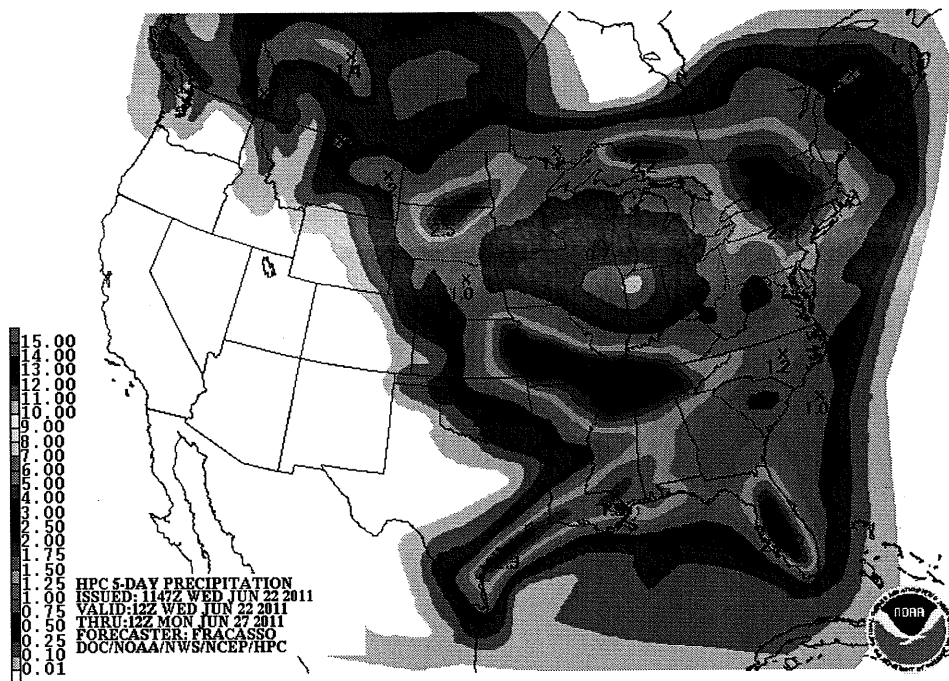


Figure 3. 5-day total QPF ending 0700 Monday, June 27, 2011.

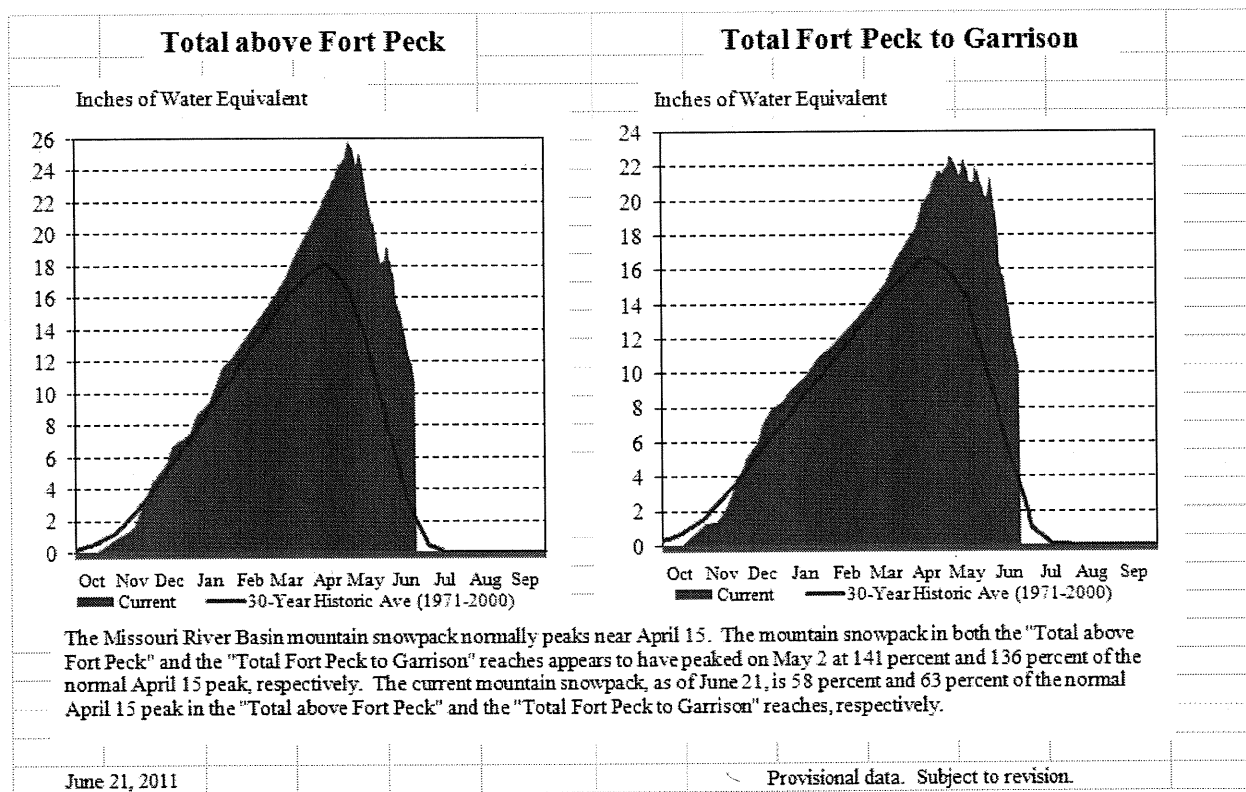


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 21, 2011.

Current Actions and Notable Information

Levee construction has been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

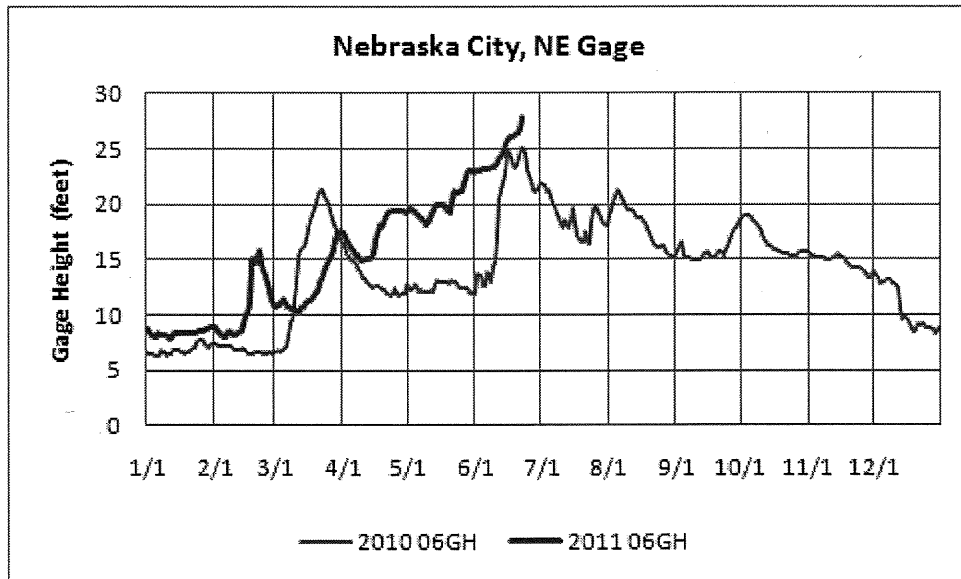


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

June 19, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

Additionally, levee R-548, located south of Brownville in Nemaha County, Nebraska overtopped on June 19.

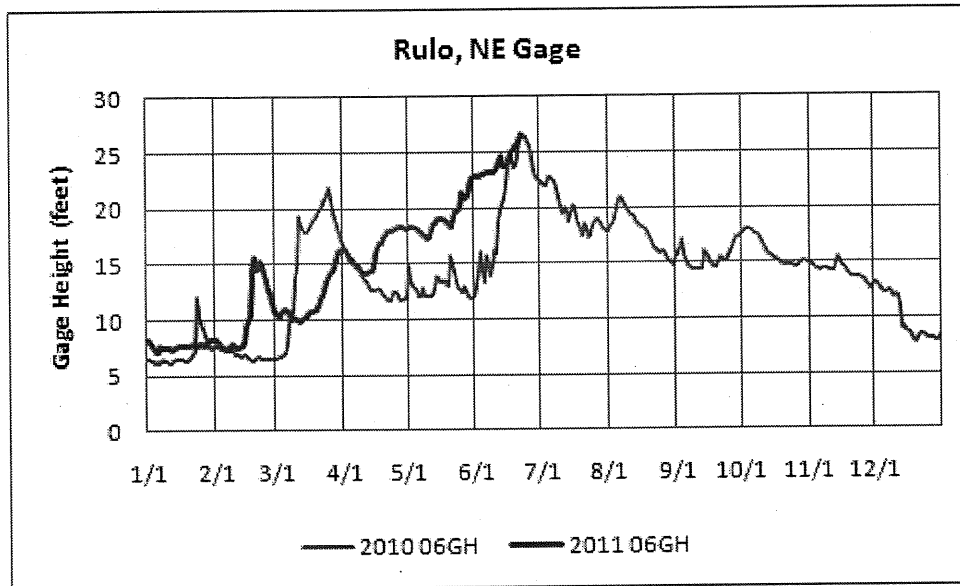


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Light to moderate rains fell over eastern Montana , North Dakota, South Dakota and Nebraska between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/22/2011 1200 UTC- Created 6/22/11 15:41 UTC

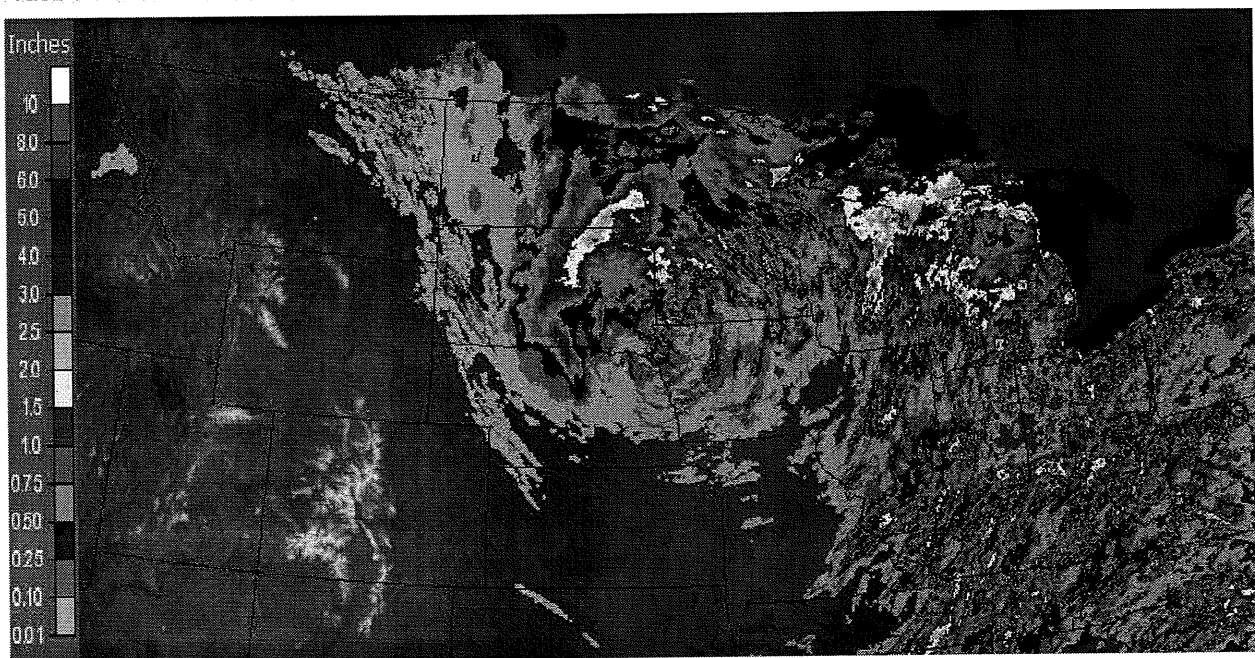


Figure 7. Rainfall on the Central Region of the United States for June 21, 2011.

7 Day Temperature Forecasts (High/Low)

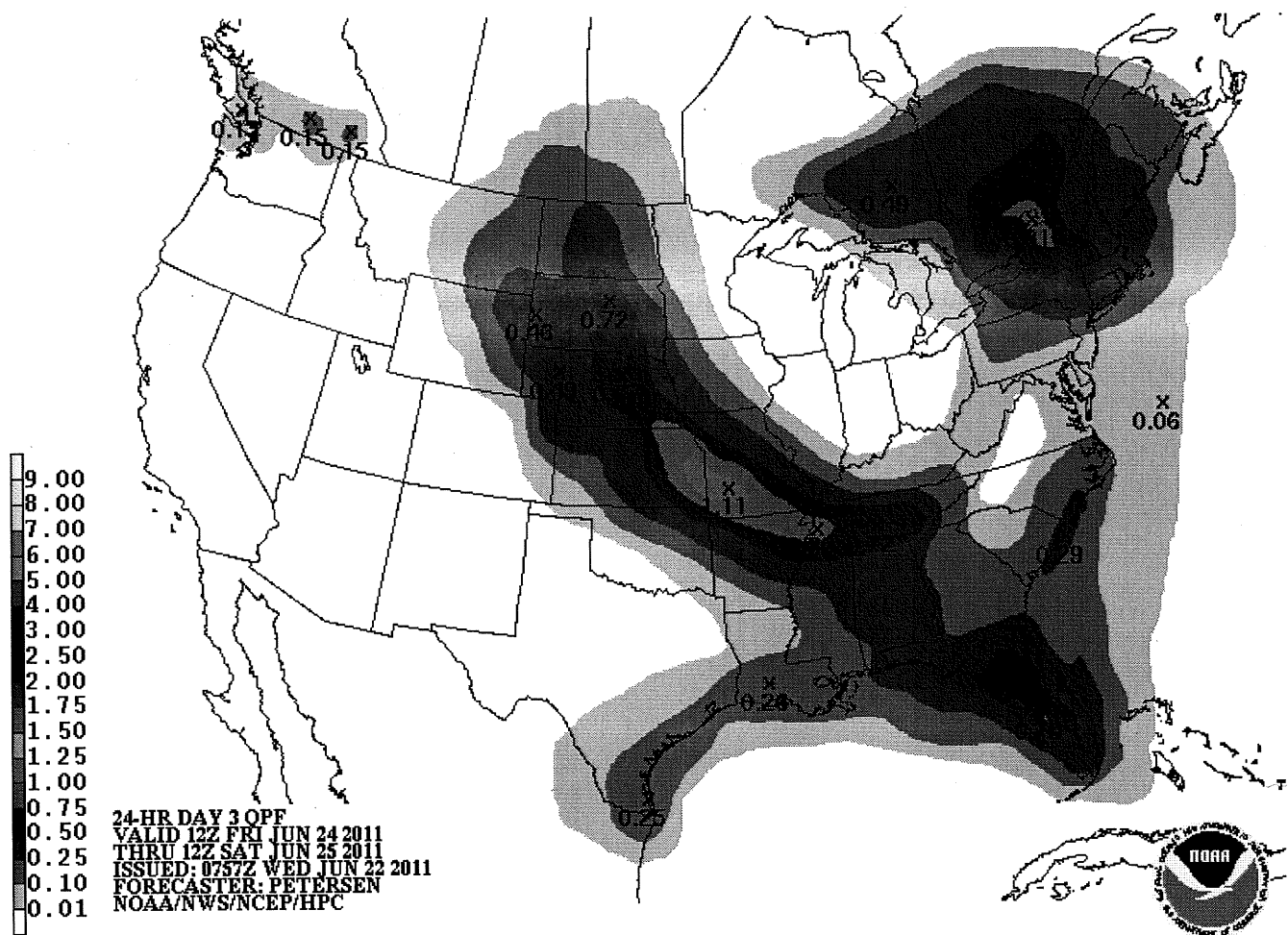
22-Jun-11

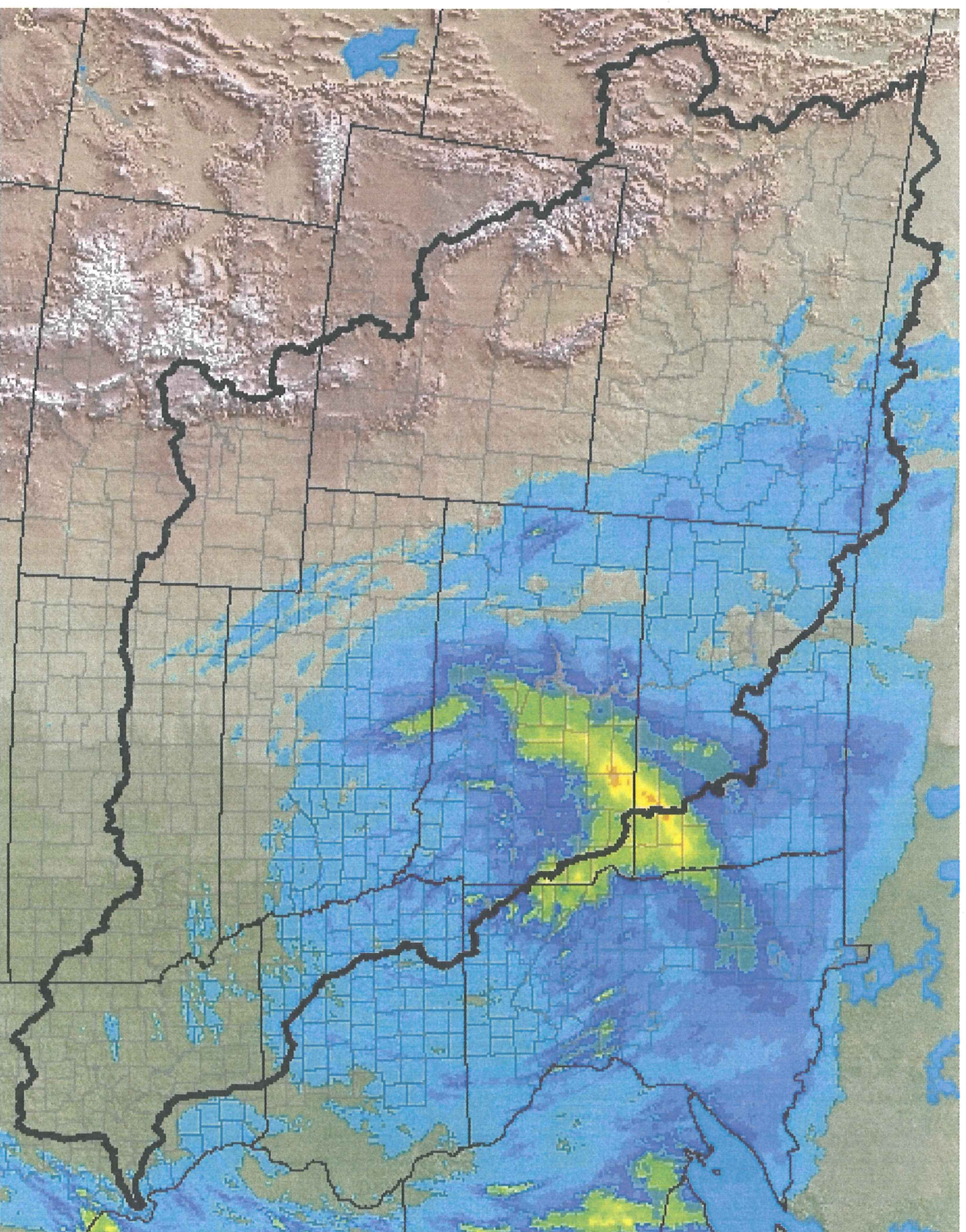
	Wed	Thu	Fri	Sat	Sun	Mon
Location	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun
Helena, MT	82	79 / 51	69 / 46	70 / 46	71 / 46	71 / 47
Livingston, MT	84	84 / 49	74 / 48	74 / 46	76 / 46	74 / 49
Billings, MT	85	88 / 57	78 / 56	80 / 54	84 / 53	79 / 57
West Yellowstone, MT	73	75 / 38	67 / 41	69 / 36	71 / 36	71 / 36
Cody, WY	79	82 / 52	75 / 55	77 / 49	79 / 50	78 / 50
Sheridan, WY	80	86 / 52	77 / 53	78 / 51	80 / 50	76 / 52
Casper, WY	81	85 / 49	83 / 55	84 / 51	86 / 50	86 / 50
Laramie, WY	75	78 / 44	78 / 48	79 / 44	80 / 44	81 / 43

Tue
28-Jun
74 / 47
80 / 49
87 / 57
73 / 37
81 / 49
85 / 52
87 / 49
79 / 41

Ending 0700 06/22

State	City	Actual 24-hour Precip
MT	Baker	0.33
	Glendive	0.23
	Wolf Point	0.36
ND	Fullerton	3.63
	Bismarck	0.03
	Minot	0.04
MN	Luverne	0.24
SD	Aberdeen	1.18
	Aberdeen 1NNE	1.64
	Watertown	0.93
	Mobridge	0.50
	Pierre	1.32
	Sisseton	1.65
	Sisseton 10ENE	2.06
	Gettysburg 8.5N	1.90
	Stickney	1.84
	Highmore	1.80
	Highmore 19NNW	1.53
	Rapid City	0.52
	Winner	0.98
	Huron	0.70
	Yankton	0.70
NE	Ainsworth	0.43
	Blair	0.13
	Fremont	0.58
	Omaha Eppley	0.30
	O'Neill	0.17
	Bloomfield	0.53
	Ericson	0.65
	Springview	0.76
IA	Denison 5ESE	0.94
	Council Bluffs 3.6E	0.64
	Spencer	0.79

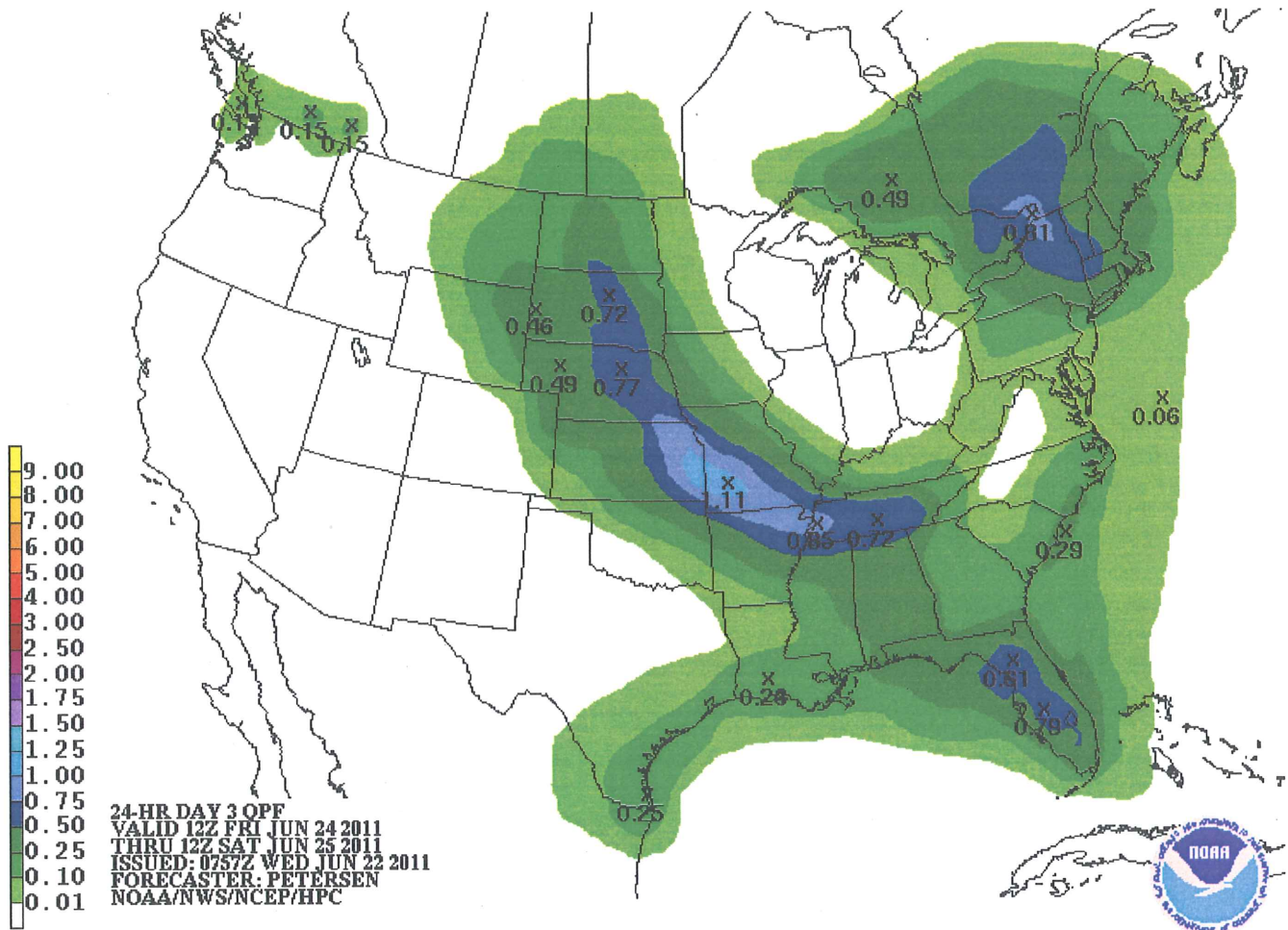


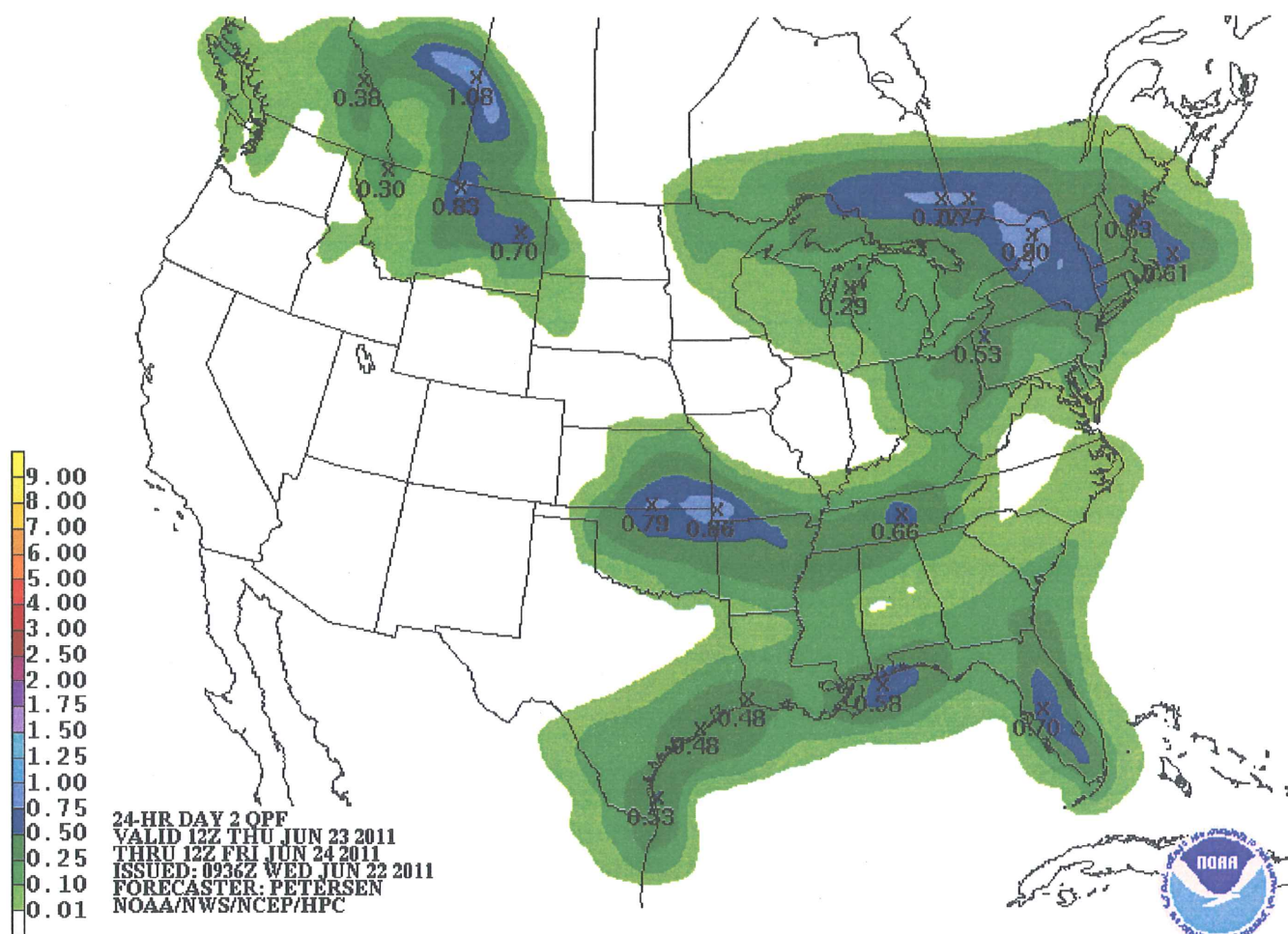


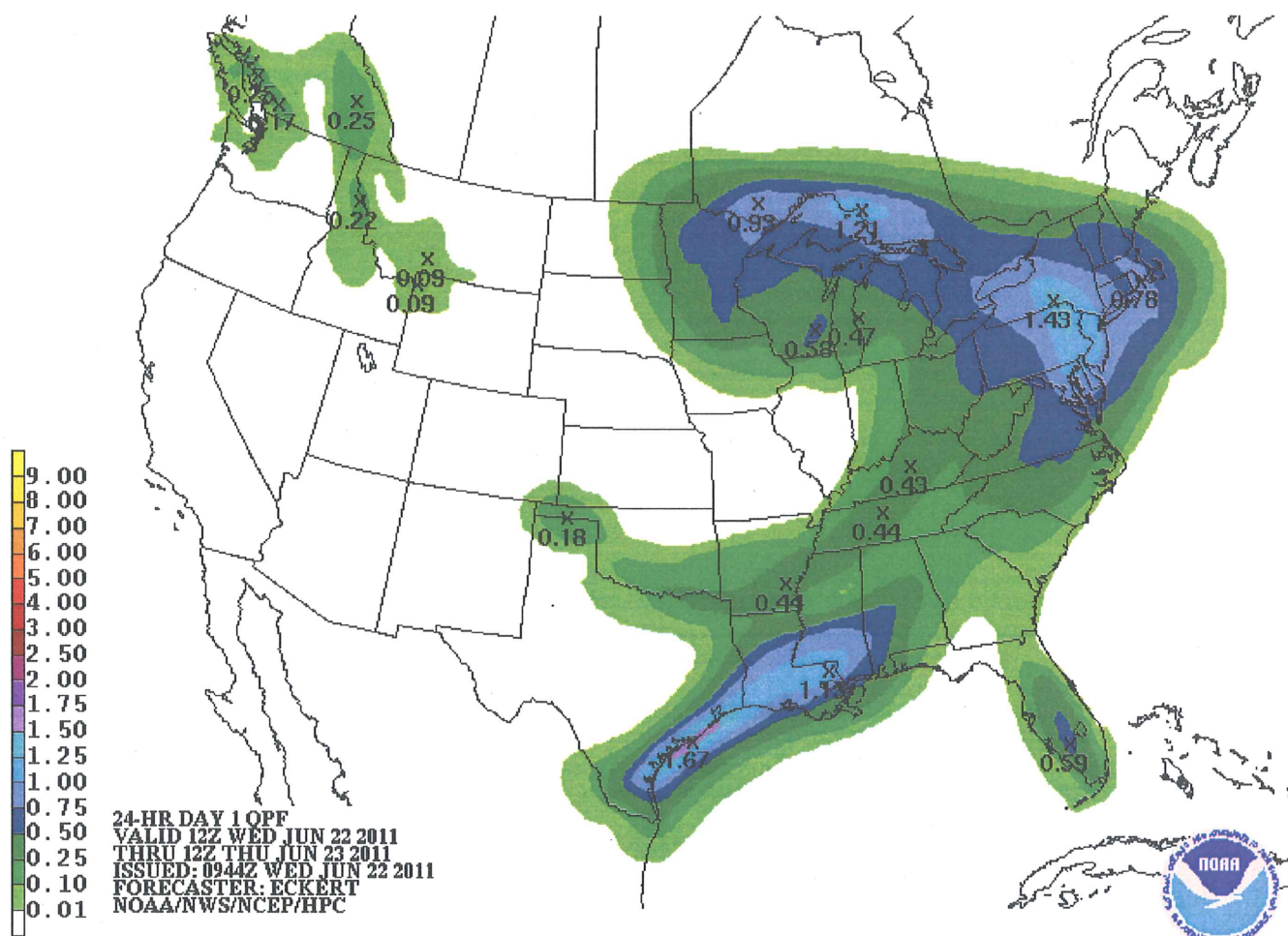
0.01 0.05 0.10 0.25 0.50 0.75 1.00 1.50 2.00 2.50 3.00 4.00 5.00 6.00 8.00 +

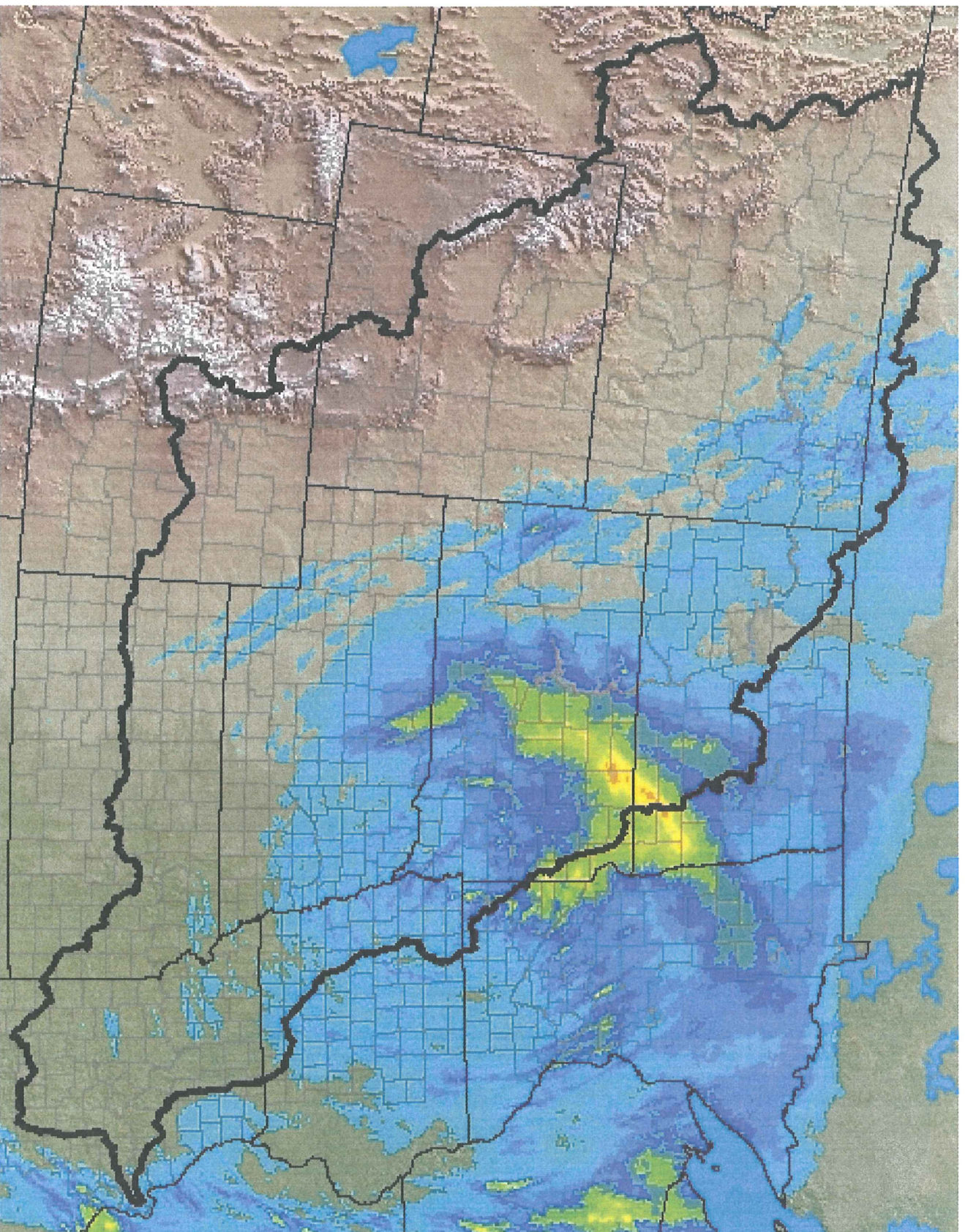
MBRFC 24-Hour Gage Biased Estimated Rainfall (inches)

Ending: 6/22/2011 at 7:00AM CDT





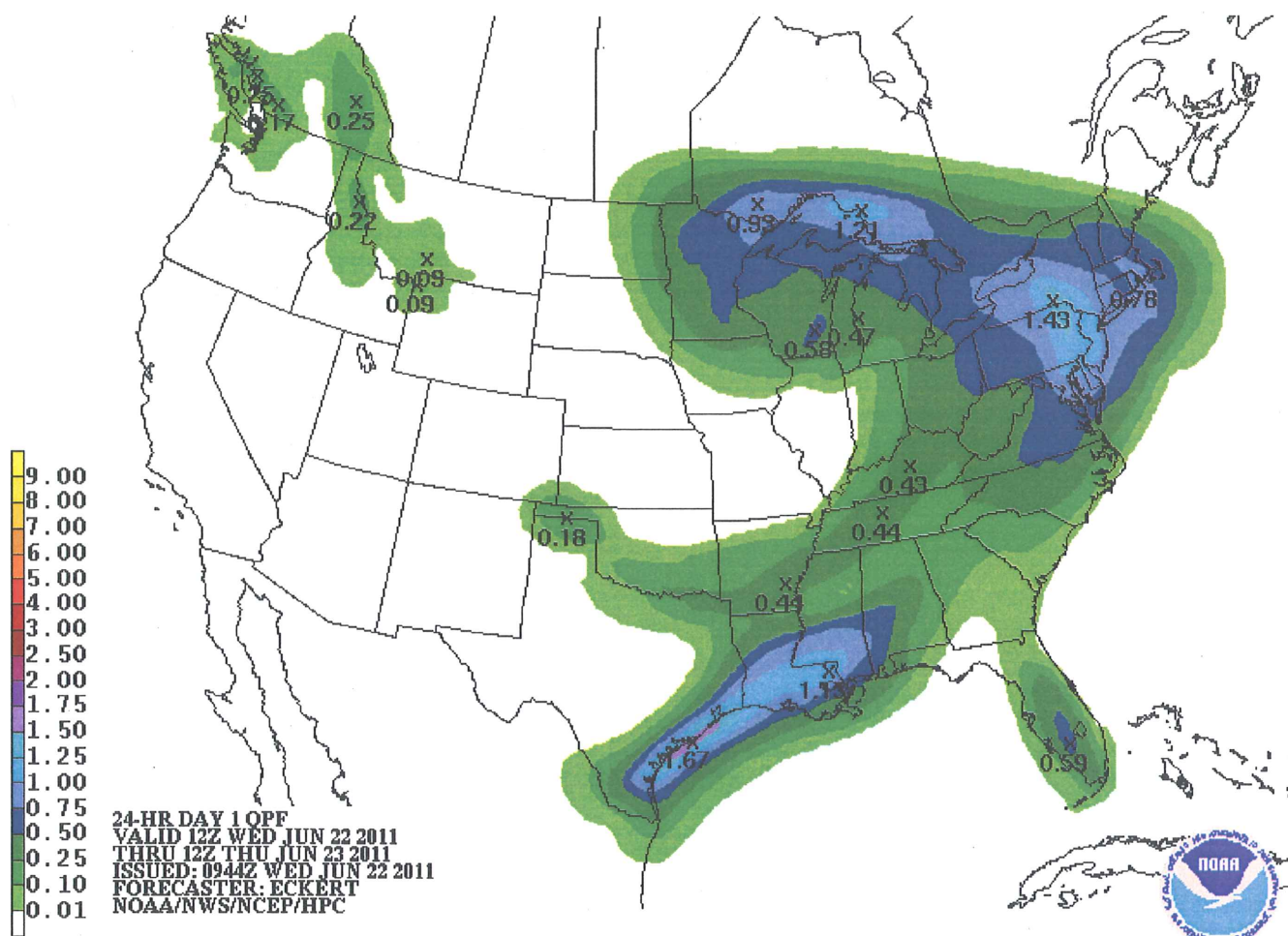


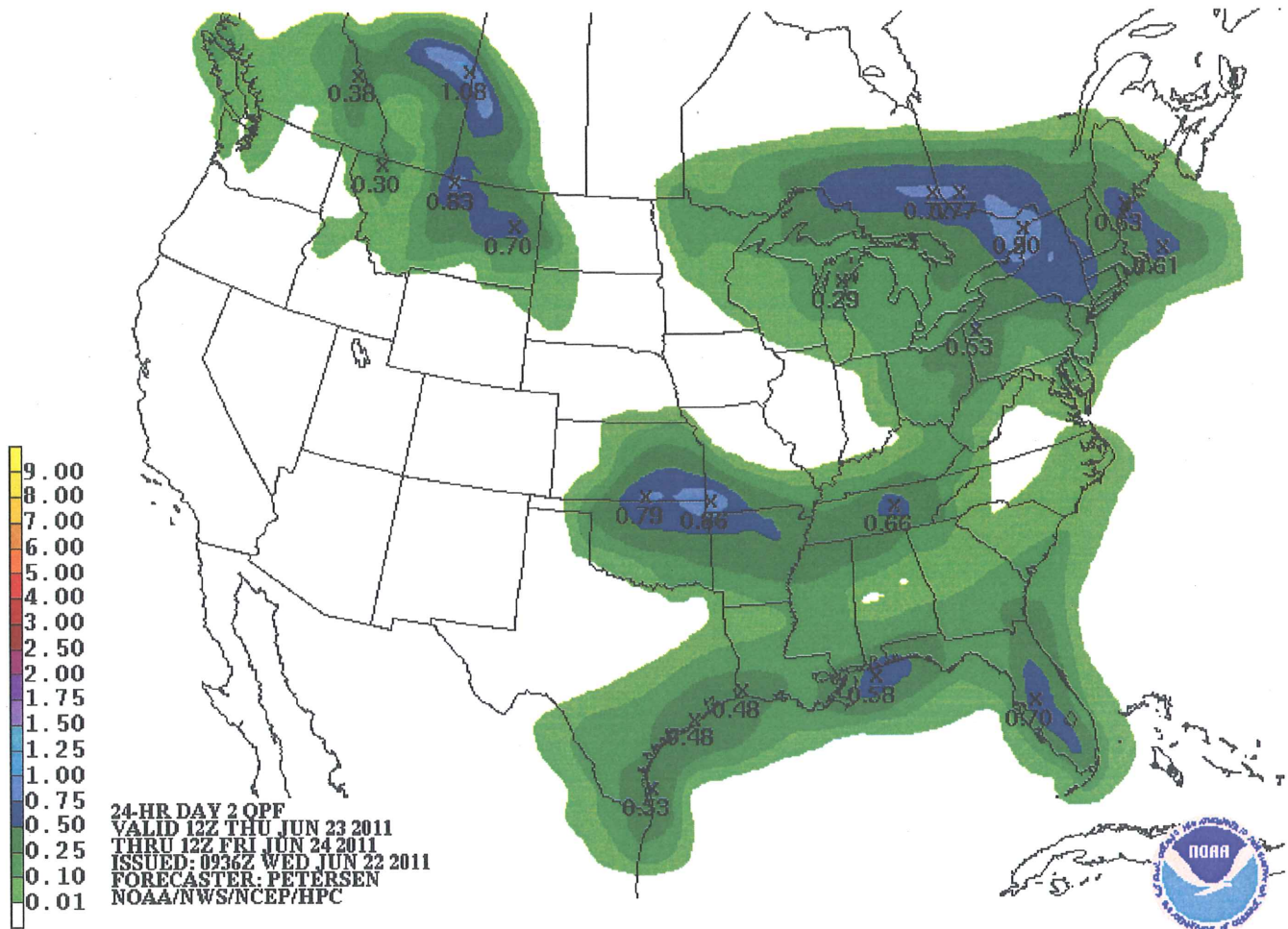


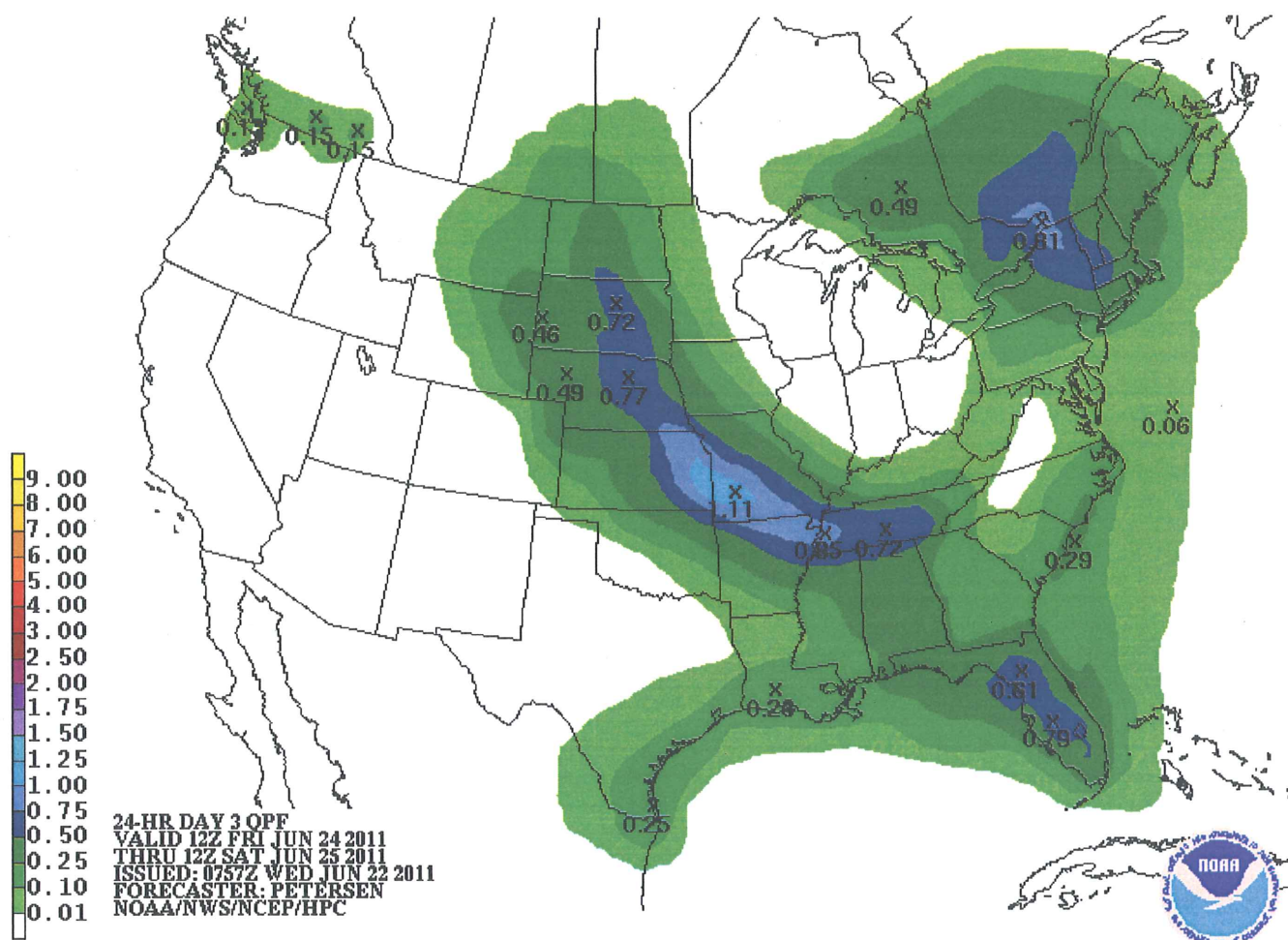
0.01 0.05 0.10 0.25 0.50 0.75 1.00 1.50 2.00 2.50 3.00 4.00 5.00 6.00 8.00 +

MBRFC 24-Hour Gage Biased Estimated Rainfall (inches)

Ending: 6/22/2011 at 7:00AM CDT







Ending 0700 06/22

State	City	Actual 24-hour Precip
MT	Baker	0.33
	Glendive	0.23
	Wolf Point	0.36
ND	Fullerton	3.63
	Bismarck	0.03
	Minot	0.04
MN	Luverne	0.24
SD	Aberdeen	1.18
	Aberdeen 1NNE	1.64
	Watertown	0.93
	Mobridge	0.50
	Pierre	1.32
	Sisseton	1.65
	Sisseton 10ENE	2.06
	Gettysburg 8.5N	1.90
	Stickney	1.84
	Highmore	1.80
	Highmore 19NNW	1.53
	Rapid City	0.52
	Winner	0.98
	Huron	0.70
	Yankton	0.70
NE	Ainsworth	0.43
	Blair	0.13
	Fremont	0.58
	Omaha Eppley	0.30
	O'Neill	0.17
	Bloomfield	0.53
	Ericson	0.65
	Springview	0.76
IA	Denison 5ESE	0.94
	Council Bluffs 3.6E	0.64
	Spencer	0.79

7 Day Temperature Forecasts (High/Low)						
21-Jun-11						
Location	Tue	Wed	Thu	Fri	Sat	Sun
	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun
Helena, MT	75	83/50	77/51	66/49	69/46	71/49
Livingston, MT	78	81/43	83/49	74/50	74/48	78/49
Billings, MT	79	84/52	87/56	78/57	80/56	86/57
West Yellowstone, MT	70	74/39	74/39	67/39	67/37	69/37
Cody, WY	74	79/52	83/54	77/53	76/48	81/51
Sheridan, WY	75	80/48	84/51	77/53	78/51	82/52
Casper, WY	74	82/48	88/49	84/52	84/50	86/51
Laramie, WY	69	75/40	79/44	78/46	77/43	81/44

Mon
27-Jun
73/48
78/49
86/57
70/37
80/51
82/52
86/50
78/41



US Army Corps
of Engineers
Omaha District

U.S. Army Corps of Engineers, Omaha District

Missouri River Basin

Mainstem and Tributary Reservoir Bulletin

Project Data Date/Time: 06/22/11 12:00 AM

Bulletin Updated: 6/22/11 11:51 AM

Project	Project Information				Current Data					Occupied Storage		
	Elevations (ft)		Cumulative Storage		Elevation (ft)	Dly Elev. Change	Storage (ac-ft)	Inflow (cfs)	Release (cfs)	MP (%)	FC (ac-ft)	FC (%)
	MP	FC	MP	FC								
MRR - Missouri River Mainstem Projects												
*Please note Mainstem and USBR data is calculated manually and will populate before 12:00 p.m.												
Fort Peck	2234.0	2250.0	14,788,000	18,463,000	2251.79	-0.14	18,910,000	47,000	60,200	100.0	4,122,000	112.2
Garrison	1837.5	1854.0	18,109,625	23,820,730	1854.35	0.20	23,948,000	192,000	150,400	100.0	5,838,375	102.2
Oahe	1607.5	1620.0	18,834,035	23,136,960	1619.33	0.42	22,815,000	218,000	153,900	100.0	3,980,965	92.5
Big Bend	1420.0	1423.0	1,621,484	1,798,614	1420.98	1.1	1,677,000	195,000	162,900	100.0	55,516	31.3
Fort Randall	1350.0	1375.0	3,124,368	5,418,186	1368.04	1.7	4,698,000	213,000	139,600	100.0	1,573,632	68.6
Gavins Point	1204.5	1210.0	320,971	469,928	1208.13	0.65	397,000	159,000	150,900	100.0	76,029	51.0
System Totals							72,445,000					
NWO - USBR Section 7 Projects												
Tiber	2993.0	3012.5	925,649	1,328,723	3006.18	0.34	1,187,151	4,434	758	100.0	261,502	64.9
Clark Canyon	5546.1	5560.4	174,367	253,442	5551.70	0.29	203,983	1,306	290	100.0	29,616	37.5
Canyon Ferry	3797.0	3800.0	1,891,888	1,992,977	3796.63	0.50	1,877,906	25,227	16,694	99.3	0	0.0
Boysen	4725.0	4732.2	741,594	892,226	4706.43	0.04	445,052	5,835	5,706	60.0	0	0.0
Buffalo Bill	5393.5	5393.5	646,565	646,565	5353.79	0.14	360,544	6,183	5,753	55.8	-	-
Yellowtail	3640.0	3657.0	1,070,000	1,328,000	3637.39	0.27	988,795	16,985	15,392	92.4	0	0.0
Jamestown	1429.8	1454.0	31,510	221,000	1443.72	0.22	104,204	2,104	1,100	100.0	72,694	38.4
Heart Butte	2064.4	2094.5	67,000	214,000	2066.28	-0.01	73,122	562	579	100.0	6,122	4.2
Keyhole	4099.3	4111.5	194,000	334,000	4097.78	-0.01	174,683	-46	0	90.0	0	0.0
Pactola	4580.2	4621.5	56,000	99,000	4581.75	0.18	57,297	183	104	100.0	1,297	3.0
Shadehill	2271.9	2302.0	120,000	350,000	2273.08	-0.05	125,635	321	452	100.0	5,635	2.5
Glendo	4635.0	4653.0	518,000	790,000	4639.12	0.14	570,582	8,686	7,603	100.0	52,582	19.3
NWO - USACE Tributary Projects												
Bowman-Haley	2754.8	2777.0	18,765	91,482	2755.66	-0.04	20,300	107	151	100.0	1,535	2.1
Pipestem	1442.5	1496.3	8,944	142,107	1482.89	-0.07	89,437	-132	600	100.0	80,493	60.4
Chatfield	5432.0	5500.0	27,428	234,207	5431.59	0.25	26,832	256	0	97.8	0	0.0
Cherry Creek	5550.0	5598.0	12,805	133,134	5550.44	0.18	13,171	181	41	100.0	366	0.3
Bear Creek	5558.0	5635.5	1,882	30,586	5558.68	-0.34	1,954	82	56	100.0	72	0.3
Papio #11	1121.0	1142.0	3,054	16,907	1121.48	0.02	3,242	12	8	100.0	188	1.4
Papio #16	1104.0	1121.0	1,211	4,782	1104.33	0.06	1,253	8	4	100.0	42	1.2
Papio #18	1110.0	1128.2	2,916	10,512	1092.50	0.01	281	1	0	9.6	0	0.0
Papio #20	1095.8	1113.1	2,536	8,611	1096.20	0.08	2,613	14	0	100.0	77	1.3
Cottonwood	3875.0	3936.0	655	8,385	3856.51	0.01	0	0	0	0.0	0	0.0
Cold Brook	3585.0	3651.4	520	7,200	3582.99	0.00	448	0	0	86.2	0	0.0
Lake Audubon	1847.0	1847.0	323,690	323,690	1849.46	0.01	INFLOW AND OUTFLOW NOT CALCULATED					
Lake Pocasse	1617.0	1617.0	11,000	11,000	POOL ELEVATION READ MONTHLY BY PROJECT OFFICE							
Salt Creek #02	1335.0	1350.0	1,100	4,957	1334.45	0.44	1,014	34	0	92.1	0	0.0
Salt Creek #04	1307.4	1322.5	2,531	9,660	1307.38	0.07	2,525	11	0	99.8	0	0.0
Salt Creek #08	1287.8	1302.0	1,780	8,375	1288.15	0.00	1,873	19	19	100.0	93	1.4
Salt Creek #09	1271.1	1285.0	1,451	5,864	1271.44	0.07	1,518	11	4	100.0	67	1.5
Salt Creek #10	1244.9	1262.0	1,629	7,468	1245.32	0.01	1,719	5	4	100.0	90	1.5
Salt Creek #12	1232.9	1252.0	1,808	9,415	1233.10	-0.02	1,850	-1	1	100.0	42	0.6
Salt Creek #13	1341.0	1355.0	2,161	7,182	1340.96	0.00	2,151	0	0	99.5	0	0.0
Salt Creek #14	1244.3	1263.5	7,500	27,597	1244.40	0.00	7,570	0	0	100.0	70	0.3
Salt Creek #17	1242.4	1266.0	783	6,628	1243.30	-0.07	922	10	15	100.0	139	2.4
Salt Creek #18	1284.0	1311.0	25,088	96,759	1284.37	0.02	25,774	39	20	100.0	686	1.0



US Army Corps
of Engineers
Omaha District

U.S. Army Corps of Engineers, Omaha District

Missouri River Basin

Mainstem Reservoir Bulletin

Bulletin Updated: 6/22/11 11:50 AM

Project	Project Information					Current Data (as of 00:00)					Occupied Storage					
	Elevations (ft)			Storage Capacity (ac-ft)		Elevation (ft)	Dly Elev. Change	Total Occupied Storage (ac-ft)	Previous Day Avg.		Multi-Use (ac-ft)	Annual FC (ac-ft)	Annual FC (%)	Exclusive FC (ac-ft)	Exclusive FC (%)	
	Top of Multi-Use	Top of Annual FC	Top of Exclusive FC	Multiple Use	Annual FC											
									Inflow (cfs)	Release (cfs)						
Project Data Date/Time 6/22/2011																
Fort Peck	2234.0	2246.0	2250.0	14,788,000	2,704,000	971,000	2251.79	-0.14	18,910,000	47,000	60,200	100.0	2,704,000	100.0	1,418,000	145.0
Garrison	1837.5	1850.0	1854.0	18,110,000	4,222,000	1,489,000	1854.35	0.20	23,948,000	192,000	150,400	100.0	4,222,000	100.0	1,616,000	166.5
Oahe	1607.5	1617.0	1620.0	18,834,000	3,201,000	1,102,000	1619.33	0.42	22,815,000	218,000	153,900	100.0	3,201,000	100.0	780,000	70.8
Big Bend	1420.0	1422.0	1423.0	1,621,000	117,000	60,000	1420.98		1,677,000	195,000	162,900	100.0	56,000	47.9	0	0.0
Fort Randall	1350.0	1365.0	1375.0	3,124,000	1,309,000	985,000	1368.04		4,698,000	213,000	139,600	100.0	1,309,000	100.0	265,000	226.9
Gavins Point	1204.5	1208.0	1210.0	307,000	86,000	57,000	1208.13	0.65	397,000	159,000	150,900	100.0	86,000	100.0	4,000	7.0
System Totals				56,784,000	11,639,000	4,664,000			72,445,000				11,578,000		4,083,000	
Project Data Date/Time 6/21/2011																
Fort Peck	2234.0	2246.0	2250.0	14,788,000	2,704,000	971,000	2251.93	-0.11	18,938,000	50,000	61,800	100.0	2,704,000	100.0	995,981	102.9
Garrison	1837.5	1850.0	1854.0	18,110,000	4,222,000	1,489,000	1854.15	0.20	23,867,000	188,000	150,200	100.0	4,222,000	100.0	1,491,875	100.2
Oahe	1607.5	1617.0	1620.0	18,834,000	3,201,000	1,102,000	1618.91	0.30	22,690,000	201,000	160,300	100.0	3,201,000	100.0	655,000	53.4
Big Bend	1420.0	1422.0	1423.0	1,621,000	117,000	60,000	1419.88	0.47	1,614,000	172,000	158,900	99.6	0	0.0	0	0.0
Fort Randall	1350.0	1365.0	1375.0	3,124,000	1,309,000	985,000	1366.34		4,554,000	200,000	143,500	100.0	1,309,000	100.0	121,000	123.3
Gavins Point	1204.5	1208.0	1210.0	307,000	86,000	57,000	1207.48	-0.09	381,000	150,000	150,000	100.0	74,000	86.0	0	0.0
System Totals				56,784,000	11,639,000	4,664,000			72,044,000				11,510,000		3,263,856	
RECENT ELEVATIONS																
Fort Peck 2251.79 2251.79 2251.81 2251.79 2251.79 2251.79 2251.79 06/22 06/22 06/22 06/22																
Garrison 1854.35 1854.43 1854.43 1854.43 1854.43 1854.43 1854.43 07:00 10:00 11:00																
Oahe 1619.33 1619.40 1619.47 1619.40 1619.37 1619.50 1619.45 1619.37 1619.50 1619.45																
Big Bend 1420.98 1421.15 1421.22 1421.15 1421.22 1421.33 1421.30 1421.22 1421.33 1421.30																
Fort Randall 1368.04 1368.19 1368.40 1368.19 1368.40 1368.55 1368.63 1368.40 1368.55 1368.63																
Gavins Point 1208.13 1208.23 1208.30 1208.13 1208.30 1208.31 1208.35 1208.30 1208.31 1208.35																
DAM INFORMATION																
Surveillance Period Triggers				Record Pool Level		Design Dam Crest		Top of Surchage		Design Spillway Elev.		Top of Gate				
Weekly	Daily	24 hour		Elev	Year	Year	Year	Crest	Crest	Crest	Top of Gate					
2246.0	2247.0	2247.0	2247.0	2252.0	1975	1975	1975	2256.1	2256.0	2250.0	2250.0					
1850.0	1854.0	1854.8	1854.8	1854.8	1975	1975	1975	1858.5	1858.5	1854.0	1854.0					
1617.5	1618.7	1618.7	1618.7	1618.7	1995	1995	1995	1644.4	1596.5	1620.0	1620.0					
1422.0	1422.0	1423.0	1423.0	1422.1	1991	1991	1991	1433.6	1385.0	1423.0	1423.0					
1365.0	1370.0	1372.0	1372.0	1372.2	1997	1997	1997	1379.3	1346.0	1375.0	1375.0					
1210.0	1210.0	1210.7	1210.7	1210.7	1980	1980	1980	1221.4	1180.0	1210.0	1210.0					



**US Army Corps
of Engineers®**

Current Stage
As of: 10:00

Gage
Williston
Omaha
Nebraska City
Brownville
Rulo

Stage
30.5
34.72
27.80
44.6
26.8

Date
Slow Recession
Peaking
Peaking
22-Jun
22-Jun

Freeboard

>5'
2' - 5'
< 2'
Breach
Breach

6/22/2011 10:00

Missouri River Federal Levee	Stream Gage Location	Likely Range of Stage with normal precipitation (ft)	Overtop Stage Previous Estimate	Overtop Stage FreeBoard Survey	Current FreeBoard (feet)	FreeBoard w/ NWS 5-Day Forecast (feet)
Williston Levee	Williston	30	n/a	32	1.5	1.5
Omaha Levee D/S 275	Omaha	34	40	38	3.3	3.3
Omaha Flood Wall	Omaha	34	41	41	6.3	6.3
Council Bluffs Ind Levee	Omaha	34	n/a	36.8	2.1	2.1
Council Bluffs Fed Levee	Omaha	34	40	40.2	5.5	5.5
L627	Omaha	34	36	38	3.3	3.3
L624	Omaha	34	35	38	3.3	3.3
L611-614	Omaha	34	35	38	3.3	3.3
R616	Omaha	34	35	36.6	1.9	1.9
R613	Omaha	34	35	36.8	2.1	2.1
L601	Nebraska City	27	25.4	27		
L594	Nebraska City	27	26	28	0.1	0.2
L575	Nebraska City	27	27	27	BREACHED	BREACHED
R573	Nebraska City	27	27	28.2	0.3	0.4
R562	Nebraska City	27	25.5	28.7	0.8	0.9
R548	Brownville	43	44	43.9		
L550	Brownville	43	42.8	43.7		
L536	Brownville	43	44.3	43.9		
R520	Rulo	25.5	27	30	3.4	3.2

*NOTE: FreeBoard survey values may not include all low areas. Overtopping could occur at stages approximately 1 foot below surveyed value.


From: North Dakota Joint Information Center [ndjic@nd.gov]
Sent: Wednesday, June 22, 2011 6:17 PM
Subject: Media Advisory - Flood Update June 23, 9:00 am

MEDIA Advisory

Flood Update

June 23, 9:00 a.m.

Flood Updates will continue at 9:00 a.m. through Friday, June 24

Flood Updates Will Occur Once Weekly on Wednesday's at 9:00 a.m.

Beginning June 29, 2011 Until Further Notice

WHAT:

Missouri River Flood Update

WHY:

Flood Update

WHEN:

Thursday

June 23

9:00 AM

WHERE:

Tom Baker Room

221 N Fifth Street, Bismarck

WHO:

Jeff Heintz, Bismarck EOC Director

Other jurisdiction officials/staff

PHOTO

OPPORTUNITIES:

Yes

MEDIA CONTACT:

Gloria David

Public Information Officer

City of Bismarck

(701) 355-1306

(701) 220-2470

Agenda

1. Opening Remarks
2. Remarks by Special Guests
3. Corps of Engineers Report
4. Bismarck Situation Report
5. Mandan Situation Report
6. Burleigh County Situation Report
7. Morton County Situation Report
8. Utility Company Reports
9. Closing Remarks

Note: Questions and interviews available after the close of the update.

Gloria David

Public Information Officer

City of Bismarck

PO Box 5503

221 N 5th St.

Bismarck ND 58506-5503

Phone 701-355-1306 (0)

Cell 701-220-2470

Fax 701-222-6470

"Be First. Be Right. Be Credible"

[REDACTED]

From: U.S. Army Corps of Engineers, Missouri River Joint Information Center
[MRJIC@usace.army.mil]
Sent: Wednesday, June 22, 2011 5:55 PM
To: Farhat, Jody S NWD02
Subject: Fort Randall Dam to release record amounts of water from flood release tunnels
Attachments: NR062211.pdf

<<http://us.vocuspr.com/Publish/520028/vcsPRAsset 520028 348656 c5220867-6ce9-45c0-83c2-dfd9e54e58a1 0 USACE LOGO small.jpg>>

BUILDING STRONG®

NEWS ADVISORY

For Immediate Release: June 22, 2011

Contact: Missouri River Joint Information Center

MRJIC@usace.army.mil

402-996-3877

Fort Randall Dam to release record amounts of water from flood release tunnels

***Previous news advisory stated that flood release tunnels will be used for first time in history. Correction: Dam to release record amounts of water from flood release tunnels

Pickstown, S.D. – The U.S. Army Corps of Engineers announced today that it will divert all of its surplus flow from the Fort Randall Dam to the dam's four regulating tunnels June 23, between 10 a.m. and noon.

The release of water will equate to a flow of approximately 120,000 cubic feet per second through the 26-foot diameter pipes.

News media are invited to record this event and will be allowed special access to the area immediately adjacent to the outlet area. Corps representatives will be available to answer media questions.

The temporary adjustment to the release distribution is necessary to allow demobilization of some equipment from the emergency spillway slab, which was being used to make routine

concrete repairs during the past week. After equipment is removed from the emergency spillway slab, surplus flows will be returned to the spillway.

The amount of water scheduled for release June 23 is 145,000 cfs. Flows in excess of 120,000 cfs (approximately 25,000 cfs) will be released through the dam's hydropower units.

The work on the spillway slab is routine and not connected to the current Missouri River flood.

For general questions regarding our flood response information efforts, please call (402) 996-3877, (877) 214-9110 or e-mail us at MRJIC@usace.army.mil. Please follow us on Facebook (www.facebook.com/OmahaUSACE [<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.facebook.com/OmahaUSACE>](file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.facebook.com/OmahaUSACE)), (www.facebook.com/OperationMightyMo [<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.facebook.com/OperationMightyMo>](file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.facebook.com/OperationMightyMo)), Twitter (www.twitter.com/OmahaUSACE [<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.twitter.com/OmahaUSACE>](file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.twitter.com/OmahaUSACE)), YouTube (www.youtube.com [<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.youtube.com>](file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.youtube.com)), and FLICKR (www.flickr.com [<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.flickr.com>](file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.flickr.com)) for the latest updates regarding our flood response operations.

You can also find flood inundation maps and local emergency management contact information on our social media sites as well as our district Web site at <http://www.nwo.usace.army.mil> [<http://USACEARMY.pr-optout.com/Url.aspx?520028x1971687x-1105603>](http://USACEARMY.pr-optout.com/Url.aspx?520028x1971687x-1105603) .

###

U.S. ARMY CORPS OF ENGINEERS - OMAHA DISTRICT
1616 Capitol Ave., Ste. 9000
<http://www.nwo.usace.army.mil/> [<http://USACEARMY.pr-optout.com/Url.aspx?520028x1971686x-1626098>](http://USACEARMY.pr-optout.com/Url.aspx?520028x1971686x-1626098)

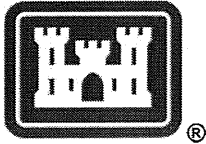
Find us on Facebook at [facebook.com/OmahaUSACE](http://www.facebook.com/OmahaUSACE) [<http://USACEARMY.pr-optout.com/Url.aspx?520028x1971685x-2146593>](http://USACEARMY.pr-optout.com/Url.aspx?520028x1971685x-2146593) and on Twitter at [twitter.com/OmahaUSACE](http://www.twitter.com/OmahaUSACE) [<http://USACEARMY.pr-optout.com/Url.aspx?520028x1971684x-175376>](http://USACEARMY.pr-optout.com/Url.aspx?520028x1971684x-175376)

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If you would rather not receive future communications from U.S. Army Corps of Engineers, Missouri River Joint Information Center, let us know by clicking here. <<http://USACEARMY.pr-optout.com/OptOut.aspx?520028x24691x318370x3x1875268x24000x6&Email=Jody.S.Farhat%40usace.army.mil>>

U.S. Army Corps of Engineers, Missouri River Joint Information Center, 1616 Capitol Ave., Ste. 9000, Omaha, NE 68102 United States



U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

NEWS ADVISORY

For Immediate Release: June 22, 2011

Contact: Missouri River Joint Information Center

MRJIC@usace.army.mil

402-996-3877

Fort Randall Dam to release record amounts of water from flood release tunnels

*****Previous news advisory stated that flood release tunnels will be used for first time in history. Correction: Dam to release record amounts of water from flood release tunnels**

Pickstown, S.D. — The U.S. Army Corps of Engineers announced today that it will divert all of its surplus flow from the Fort Randall Dam to the dam's four regulating tunnels June 23, between 10 a.m. and noon.

The release of water will equate to a flow of approximately 120,000 cubic feet per second through the 26-foot diameter pipes.

News media are invited to record this event and will be allowed special access to the area immediately adjacent to the outlet area. Corps representatives will be available to answer media questions.

The temporary adjustment to the release distribution is necessary to allow demobilization of some equipment from the emergency spillway slab, which was being used to make routine concrete repairs during the past week. After equipment is removed from the emergency spillway slab, surplus flows will be returned to the spillway.

The amount of water scheduled for release June 23 is 145,000 cfs. Flows in excess of 120,000 cfs (approximately 25,000 cfs) will be released through the dam's hydropower units.

The work on the spillway slab is routine and not connected to the current Missouri River flood.

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You can also find flood inundation maps and local emergency management contact information on our social media sites as well as our district Web site at <http://www.nwo.usace.army.mil>.

###

U.S. Army Corps of Engineers – Northwestern Division 1616 Capitol Ave., Omaha, Neb. 68102
<http://www.nwo.usace.army.mil/>

Find us on Facebook facebook.com/OmahaUSACE, Twitter twitter.com/OmahaUSACE, YouTube youtube.com/OmahaUSACE and Flickr flickr.com/OmahaUSACE

[REDACTED]

From: Tom & Karla Waters [waters4@ix.netcom.com]
Sent: Wednesday, June 22, 2011 5:49 PM.
To: Waters Tom & Karla
Subject: ***RIVER UPDATE***MLDDA***RIVER UPDATE***

Importance: High

Missouri River Joint Information Conference Call Report

June 22, 2011

Friends:

The Missouri River Joint Information Center held a conference call this evening from the Division offices in Omaha, Nebraska. Mr. Erik Blechinger, at the Missouri River Joint Information Center, hosted the call. The following is information from the call and other information provided to me by other sources:

Opening remarks:

The Phone Number for the Joint Information Center is:

(877) 214-9110.

The MRJIC website is: MRJIC@USACE.ARMY.MIL <mailto:MRJIC@USACE.ARMY.MIL>

The Public is encouraged to use the phone number or website to contact the Information Center with questions or concerns.

The Joint Information Center is open 7am-8pm. Phone calls are forwarded during non-working hours and will be answered 24/7. The Joint Information Center responded to 22 media requests for Kansas City and Omaha today.

LEVEE BREACH

No new levee breaches today

LEVEES OVERTOPPING

Federal Levee L-550 near Rock Port, Missouri is overtopping at approximately River Mile 535.5.

Federal Levee R-548 Across the River from L-550 is overtopping.

Both of these levees have been overtopping for several days.

Major flood fighting is ongoing at Levee L-536 near Rock Port in Atchison County. Flood fighting is very active at many locations in Holt County, Missouri

Current Levee Breaches:

L-575 Near Hamburg, Iowa

Union Township, Near Craig, Missouri

Holt County #10, Big Lake, Missouri

Private Levees Breached (Not in PL84-99 Rehab Program)

Mill Creek Levee, Holt County near Corning

Big Tarkio River Levee-Holt County near Craig

Levee District #10 Levee-Holt County near Big Lake

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R-548 Near Brownville Nebraska

Current Weather Conditions

Some light rain remains in the Eastern Dakotas and Nebraska as the current system moves eastward. The next system moving in from the Pacific will likely produce some showers and Thunder Storms beginning Thursday night. Rainfall amounts of $\frac{1}{4}$ " to $\frac{1}{2}$ " may be seen in Western North Dakota and Eastern Montana Friday and Saturday. As the system moves east showers of about $\frac{1}{2}$ " may be seen in Northern Nebraska and Southern South Dakota. A drier pattern sets up after the weekend.

Gavins Point Releases will be increased to 160,000 cfs by Thursday Morning.

Water Release and Reservoir Information:

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Weather across the basin has impacted the release schedule for the reservoir system. The reservoir control center has very little flexibility remaining. Inflows have been very high over the past 24 hours.

The Missouri River Reservoir set a new record today. The total volume of storage in the system reached 72.4 MAF this new record level exceeded the previous record of 72.1 MAF set in July of 1975.

Current plans for the reservoirs are as follows:

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Department of Transportation Update:

Interstate I-29 Update:

Interstate I-29 is closed from Mile Post 110 in Missouri north to Mile Post 10 in Iowa. Iowa DOT may close an additional 10 miles north to Mile marker 20 in the next few days. I-29 is also closed from Mile markers 55 to 71 beginning near the Council Bluffs/Omaha area and north.

The Global Detour for I-29 is: I-35 North to I-80 west to I-680 to I-29 north of Council Bluffs

In Iowa: Highway 2 crossing the Missouri River is closed.

In Missouri: US Highway 159 in Holt County is closed-This also closes the Bridge to Rulo. US Highway 136 in Atchison County is closed cutting off access to the Brownville Bridge.

Nearly all crossing across the Missouri River are closed in Northwestern Missouri. The best detour across the River is US Highway 36 at St. Joseph or bridges in the Kansas City area. The best route for traffic coming from the west is Interstate I-70.

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The Omaha District continues to help build many levee projects and improvements as they continue to be in a full flood fight at several locations within their area of operations.

Water is now up on the Ditch #6 levee protecting Hamburg, Iowa. The water is now at 914' and there is 5' of freeboard at this time. Teams from the Omaha District are on the ground and in the air monitoring levees. Sponsors are reminded to please call the Corps of Engineers with any issues.

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I will be in wheat harvest for the next several days, so the timing of these reports may vary, but I hope to be able to continue to provide information with daily reports. This e-mail list and the twitter followers continue to grow. Thanks everyone!

Stay Safe!

Tom Waters

Missouri Levee & Drainage District Association

Contact Information:

Tom Waters, Chairman

Missouri Levee & Drainage District Association

36257 Highway Z

Orrick, Missouri 64077

(816) 770-5562

(816) 591-7949 Cell

Twitter: @MissouriLevees

Northwestern Division:

www.nwd.usace.army.mil

twitter.com/#!/NWDCorps

KC District:

www.nwk.usace.army.mil

www.facebook.com/usace.kcd

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From: North Dakota Joint Information Center [ndjic@nd.gov]
Sent: Wednesday, June 22, 2011 5:46 PM
Subject: News Release - Voluntary Evacuation Extended Through 8 a.m. Thursday

NEWS RELEASE

For Immediate Release:
Information, Contact:

For More

June 22, 2011

Wednesday, 5:45 pm

701-355-1306

Gloria David 701-220-2470

Public Information Officer

Voluntary Evacuation Extended Through 8 a.m. Thursday

BISMARCK, N.D. - Based on the current river level and observed conditions, the voluntary evacuation order for the Southport and Harbor Drive area remains in effect through 8:00 am on Thursday, June 23. An update on the evacuation order status will be issued at 8:00 am.

Riverwood Drive and Mills Avenue are currently closed due to muddy and unsafe conditions and will not be open today.

The shuttle is not operating due to road conditions.

Residents with ATV's will be allowed to travel on Riverwood Drive and Mills Avenue.

For more information visit www.bismarck.org

###

[REDACTED]

From: Tom & Karla Waters [waters4@ix.netcom.com]
Sent: Wednesday, June 22, 2011 5:49 PM
To: Waters Tom & Karla
Subject: ***RIVER UPDATE***MLDDA***RIVER UPDATE***

Importance: High

Missouri River Joint Information Conference Call Report

June 22, 2011

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Tom Waters

Missouri Levee & Drainage District Association

Contact Information:

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36257 Highway Z

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NWO

From: Williamson, Eileen L NWO
Sent: Wednesday, June 22, 2011 5:43 PM
To: Williamson, Eileen L NWO; MRJIC; Thomas, Kimberly S NWO; [REDACTED] NWO
Cc: DLL-CENWO-PAO; DLL-CENWO-EOC CMT-ALL
Subject: RE: Updated Inundation maps (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Big Bend to Fort Randall Maps are now up.

<http://www.nwo.usace.army.mil/html/op-e/20110603Maps/BigBendFtRandall622.html>

-----Original Message-----

From: Williamson, Eileen L NWO
Sent: Wednesday, June 22, 2011 4:51 PM
To: MRJIC; Thomas, Kimberly S NWO; [REDACTED] NWO
Cc: DLL-CENWO-PAO; DLL-CENWO-EOC CMT-ALL
Subject: Updated Inundation maps (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Maps for Gavins to Rulo are up on the web.

Working the next set now.

ELW

Eileen L. Williamson

Public Affairs Specialist

U.S. Army Corps of Engineers

Office: 402-995-2417

Mobile: 402-779-1448

eileen.l.williamson@usace.army.mil

Internet: [nwo.usace.army.mil](http://www.nwo.usace.army.mil) <<https://www.nwo.usace.army.mil/>>

Facebook: facebook.com/OmahaUSACE <<http://www.facebook.com/OmahaUSACE>>

Twitter: twitter.com/OmahaUSACE <<http://www.twitter.com/OmahaUSACE>>

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: Hofmann, Anthony J COL NWK
Sent: Wednesday, June 22, 2011 5:40 PM
To: Farhat, Jody S NWD02; Blechinger, Erik T NWO
Subject: Fw: EDITORIAL BOARD

Erik and Jody-
Here's the info for tomorrow.
Jody--would you be willing to provide an overview of the current situation using the briefing that the CG has been using?
Can do this after opening remarks.
Can call you after tonight's call.

Colonel Tony Hofmann, PMP
Commander, Kansas City District
U.S. Army Corps of Engineers
B.B. 816-807-0129

----- Original Message -----

From: Kolarik, David S NWK
To: Hofmann, Anthony J COL NWK
Cc: Goodnight, Rexford G NWK; Grothaus, John J NWK; Kneuvean, Eugene J NWK; McCoy, Diana NWK; Phillips, Amy L NWK; Taylor, Deborah A NWK; Myers, Larry L NWK
Sent: Wed Jun 22 15:05:15 2011
Subject: EDITORIAL BOARD

Reminder:

Tomorrow's editorial board will begin in RM 645 at 9:15 a.m. We will have 4 representatives from the KC Star. 3 editors and 1 reporter.

Should last about an hour with a 30 minute follow-on tour of the EOC.

Diana, please clear reporters with GSA and security and please ensure EOC is aware and prepared. Thank You. v/r --David

David S. Kolarik
Chief, Public Affairs
U.S. Army Corps of Engineers
Kansas City District
816.389.3072
BB 816.863.4102

Visit us on the Web www.nwk.usace.army.mil

[REDACTED]

From: U.S. Army Corps of Engineers, Missouri River Joint Information Center
[mrjic@usace.army.mil]
Sent: Wednesday, June 22, 2011 5:21 PM
To: Farhat, Jody S NWD02
Subject: Fort Randall Dam flood release tunnels to be used for first time in history
Attachments: NR062211.pdf

<<http://us.vocuspr.com/Publish/520028/vcsPRAsset 520028 348656 c5220867-6ce9-45c0-83c2-dfd9e54e58a1 0 USACE LOGO small.jpg>>

BUILDING STRONG®

NEWS ADVISORY

For Immediate Release: June 22, 2011

Contact: Missouri River Joint Information Center

MRJIC@usace.army.mil

402-996-3877

Fort Randall Dam flood release tunnels to be used for first time in history

Pickstown, S.D. – The U.S. Army Corps of Engineers announced today that it will divert all of its surplus flow from the Fort Randall Dam to the dam's four regulating tunnels June 23, between 10 a.m. and noon.

The release of water will equate to a flow of approximately 120,000 cubic feet per second through the 26-foot diameter pipes.

News media are invited to record this event and will be allowed special access to the area immediately adjacent to the outlet area. Corps representatives will be available to answer media questions.

The temporary adjustment to the release distribution is necessary to allow demobilization of some equipment from the emergency spillway slab, which was being used to make routine concrete repairs during the past week. After equipment is removed from the emergency spillway slab, surplus flows will be returned to the spillway.

The amount of water scheduled for release June 23 is 145,000 cfs. Flows in excess of 120,000 cfs (approximately 25,000 cfs) will be released through the dam's hydropower units.

The work on the spillway slab is routine and not connected to the current Missouri River flood.

For general questions regarding our flood response information efforts, please call (402) 996-3877, (877) 214-9110 or e-mail us at MRJIC@usace.army.mil. Please follow us on Facebook (www.facebook.com/OmahaUSACE

<<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.facebook.com/OmahaUSACE>>), (www.facebook.com/OperationMightyMo <<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.facebook.com/OperationMightyMo>>), Twitter

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<<file:///C:/Users/g6pa9mlh/AppData/Local/Microsoft/Windows/Temporary%20Internet%20Files/Content.Outlook/SC3W9V0Y/www.flickr.com>>) for the latest updates regarding our flood response operations.

You can also find flood inundation maps and local emergency management contact information on our social media sites as well as our district Web site at <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1968487x405853>> .

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U.S. ARMY CORPS OF ENGINEERS - OMAHA DISTRICT 1616 Capitol Ave., Ste. 9000

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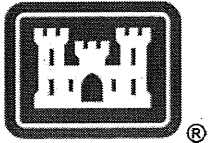
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U.S. Army Corps of Engineers, Missouri River Joint Information Center, 1616 Capitol Ave.,
Ste. 9000, Omaha, NE 68102 United States



U.S. ARMY CORPS OF ENGINEERS

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NEWS ADVISORY

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MRJIC@usace.army.mil

402-996-3877

Fort Randall Dam flood release tunnels to be used for first time in history

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You can also find flood inundation maps and local emergency management contact information on our social media sites as well as our district Web site at <http://www.nwo.usace.army.mil>.

###

U.S. Army Corps of Engineers – Northwestern Division 1616 Capitol Ave., Omaha, Neb. 68102
<http://www.nwo.usace.army.mil/>

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[REDACTED]

From: [REDACTED] NWD
Sent: Wednesday, June 22, 2011 5:18 PM
To: [REDACTED] NWD; Farhat, Jody S NWD02; Blechinger, Erik T NWO
Subject: FW: Pictures of Missouri Flooding (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Team,

If you have not seen these pictures of MR flooding.

[REDACTED]
[REDACTED], Ph.D, P.E.
Chief, Business Technical Division
Northwestern Division, U.S. Army Corps of Engineers
Phone: [REDACTED]
Cell: [REDACTED]
[\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)

-----Original Message-----

From: [REDACTED] NWD
Sent: Wednesday, June 22, 2011 11:24 AM
To: [REDACTED] NWD
Cc: [REDACTED] NWD; [REDACTED] NWD02; [REDACTED] NWD
Subject: FW: Pictures of Missouri Flooding

Pretty good if you haven't seen.

[REDACTED]
-----Original Message-----

From: [REDACTED] NWP
Sent: Wednesday, June 22, 2011 11:08 AM
To: [REDACTED] NWW; [REDACTED] NWS; [REDACTED] NWD
Subject: FW: Pictures of Missouri Flooding

FYI

[REDACTED] P.E.
Chief, Hydraulics and Hydrology Branch
Portland District
333 SW 1st Ave
Portland, OR 97008
[REDACTED] BB [REDACTED]

-----Original Message-----

From: [REDACTED] NWP
Sent: Wednesday, June 22, 2011 10:46 AM

To: [REDACTED] NWP; [REDACTED] NWP; [REDACTED] NWP; [REDACTED] NWP;
[REDACTED] NWP; [REDACTED] NWP; [REDACTED] NWP; [REDACTED] NWP;
NWP; [REDACTED] NWP; [REDACTED] NWP
Cc: [REDACTED] NWP; [REDACTED] NWP; [REDACTED] A NWP; [REDACTED] NWP;
[REDACTED]
Subject: Pictures of Missouri Flooding

Carolyn Flaherty provided this nice album of pictures taken by someone who flew the reach from Gavins Point Dam (last dam on system just upstream of Sioux City Iowa) to near Hamburg Iowa, south of Omaha where L575 breached a couple weeks ago. Note I-29 is under water in many places. There are no federal levees upstream of Omaha due to down cutting of Missouri by about 9 feet since late 50's when the dams went in (system was starved of sediment). For perspective, these photos were taken 13 June when release from Gavins was about 145,000 cfs. They are up to 160,000 cfs Gavins today. Flows at Omaha were about 150,000 cfs on the 13th. They were 170k on Monday, 190k yesterday after a large thunderstorm. Stages are about 2.5 feet higher at Omaha today than they were on the 13th when these pictures were taken.

This will be a long term event as they will need to be evacuating water from the system through middle to end of August. There are going to be continuing issues with the levees and tiebacks downstream at and downstream of Omaha all summer given the duration of this event.

[REDACTED]
<https://picasaweb.google.com/104592539075472798431/TheGreatMissouriRiverFloodOf2011?authkey=Gv1sRgCLLao07rm qp1AE>

[REDACTED] P.E.
Chief, Hydraulics and Hydrology Branch
Portland District
333 SW 1st Ave
Portland, OR 97008

[REDACTED] BB [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 4:58 PM
To: Farhat, Jody S NWD02; McMahon, John R BG NWD; Tipton, Robert A Col NWD; Anderson, G Witt NWD; Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWK; [REDACTED] NWK; Williamson, Eileen L NWO; Farmer, Monique L NWO; Johnston, Paul T HQ@ NWO; A [REDACTED] NWD; [REDACTED] J NWD; [REDACTED] NWD; [REDACTED] M NWD02; [REDACTED] MAJ NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED]
[REDACTED] SAW
Cc: [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWD02
Subject: RE: WM Talking Points for 22 June stakeholder call (UNCLASSIFIED)
Attachments: 2011 Missouri River Flood Talking Points 22 Jun 2011.docx

Classification: UNCLASSIFIED
Caveats: NONE

fyi

Classification: UNCLASSIFIED
Caveats: NONE

2011 Missouri River Flood Talking Points
Missouri River Water Management
24 June 2011

The total volume of water stored in the Missouri River Mainstem reservoir system set a new record today when it reached 72.4 MAF, surpassing the previous record of 72.1 MAF set in July of 1975. Despite record releases from all of the projects, reservoir levels at five of the six dams and the total volume of water stored in the reservoir system continue to rise. Only the level of Fort Peck reservoir has shown a steady decline the past several days. We continue to monitor the situation closely; there is very little flexibility remaining.

The reservoir schedule posted on the web this afternoon includes updated reservoir inflow forecasts going out through July 22. These latest projections of inflow are based on runoff expected from remaining snowpack in the mountains and continued normal to above normal summer-type rains, but not extreme events like experienced last weekend. It also takes into consideration regulation of the tributary reservoirs upstream of Fort Peck and Garrison including storage available in those reservoirs and planned releases during forecast period.

With these latest inflow projections, there were no significant changes to the release schedules, but careful observers will notice that reservoir levels at Fort Peck and in particular, Garrison, are lower than previous projections. We have also added an additional week to the forecast, extending it out to 22 July.

As I mentioned, there were no significant changes to the release schedule posted on the web this afternoon.

- Releases from Fort Peck remain at 60,000 cfs.
- Releases from Garrison remain at 150,000 cfs.

Releases from Oahe reservoir were reduced from 160,000 cfs to 150,000 cfs yesterday due to very high flows on the Bad River, which enters the Missouri River just downstream of Pierre, SD. The release reduction was necessary to manage the Big Bend pool level; and also had the effect of limiting the stage increase in Pierre and Fort Pierre due to the high flows on the Bad river. Releases will remain at remain at 150,000 cfs until the flows on the Bad River recede and then will be returned to the 160,000 cfs rate, likely within the next day or two.

Big Bend releases were increased from 163,000 cfs yesterday to 165,000 cfs today. They will be maintained at that for about a week to help manage the Big Bend pool level.

Releases from Fort Randall were reduced to 138,000 cfs yesterday due to high inflows into Gavins Point reservoir. They will be held at that level for a couple days and will eventually be stepped up to approximately 157,000 cfs.

Releases from Gavins Point dam were increased to 155,000 cfs this morning and will be increased to 160,000 cfs on tomorrow morning. No additional release increases are planned at this time.

The forecast is based on best available information at this time; actual releases are based on conditions on the ground. As witnessed this week, additional heavy rain over the basin may

result in changes to the release schedule. Peak releases are expected to continue well into August.

The mountain snowpack continues to decline.

Above Fort Peck: peaked at 141 percent of the normal peak accumulation, currently at 55%, down 61% from this year's peak

Fort Peck to Garrison: peaked at 136 percent of the normal peak accumulation, currently at 59%, down 56% from this year's peak

As of June 21

North Platte: peaked at 156 percent of the normal peak accumulation, currently at 43% (-72%)

South Platte: peaked at 150 percent of the normal peak accumulation, currently at 35% (-77%)

[REDACTED]

From: Williamson, Eileen L NWO
Sent: Wednesday, June 22, 2011 4:51 PM
To: MRJIC; Thomas, Kimberly S NWO; [REDACTED] NWO
Cc: DLL-CENWO-PAO; DLL-CENWO-EOC CMT-ALL
Subject: Updated Inundation maps (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Maps for Gavins to Rulo are up on the web.

Working the next set now.

ELW

Eileen L. Williamson

Public Affairs Specialist

U.S. Army Corps of Engineers

Office: 402-995-2417

Mobile: 402-779-1448

eileen.l.williamson@usace.army.mil

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Classification: UNCLASSIFIED
Caveats: NONE

From:
Sent:
To:

Tom & Karla Waters [waters4@ix.netcom.com]
Wednesday, June 22, 2011 4:41 PM
Waters Tom & Karla; Williamson John; Vanwinkle Terry; Hicks Aaron; Dewey Dave (River Marine Enterprises); Lay Bill; Farhat, Jody S NWD02; Hurst Blake; McManus John (MO AGO); Colvin Eric (Howard Levee District #3); Westbrook Rick; johnsonsj@centurytel.net; Jackson Nancy; Flores J.R. (NRCS); Trachsel Wayne (Chamois LD); Michaels Joe; Buntin Dru (Missouri DNR); Meng Rodney; Cambridge Dan (Lexington Tourism); McNelly Josh (Ray-Carroll Crop Insurance); Kirby Russ & Marcia; Anderson, G Witt NWD; Kamphoefner Paul; Townsend Deanne; Ruch, Robert J COL NWO; Binder Darwin (L497); Kuenzel Danny; Brockmeier Michael; Cassidy Dan (Missouri Farm Bureau); Nelson-Stastny Wayne (USFWS); Blackwell Bill; Waters Glen; Cail Robert (USFWS); Jackson Bill; Frazier Jenny (Missouri AGO); Stock Tom; Vandiver Gary; Ott Douglas (County Bank); Muench, Lynn M LRP; Pozzo John; Elsbury Angela; Gooch Don; Attema Menno; Williams Ryan (City of Columbia); Ratto Mark (Congressman Graves); Owsley Chuck; Johnston, Paul T HQ@ NWO; Rea Donald (St. Louis Water); Lewellen Rodney (Mi-De LD); Morris Mary Ann; Hommes Harold; Kirby Karen; Sullivan Tade; McMurry Dave (UMIMRA); Stegmann Michael D.; Walley George; McMullen Dalla (Westbrook & Co.); Appleton Seth (Congressman Luetkemeyer); Gebhardt Jeffrey (Lower Chariton); Perry Bobby; Schlicht Mark (ESI Contracting Corp); Jorgensen Don; Noltensmeyer John (Montgomery County); kmbcnews@gmail.com; Shelby Donna and Brett; Russell McKinney (Ham Hill Farms, Inc.); Dorsey Darrell (BPU); Hall Cindy (Senator McCaskill); Munson Ross Carol; Townsend Tom; Marble Gary (Congressman Luetkemeyer); Clark Scott; Schwoeppe Kenneth; Perry Kristin (ALOT); Coats Susan; Morris Debra; Patke Clarence; Shirley Steve; Payne Tom (Dean-Mizzou CAFNR); Hockemeier Farrell; [REDACTED] NWK; Brennan Larry (Kaw Valley Drainage); Noelker Doak & Cindy; Human David; Buckallew Adam (MO Soybean Assn.); Britt Randy (Cherry Valley); Banks David (L488); Corkill, Melissa R NWK; Meyerkorth Richard; Hecox Rob; Elliott Perry; Reeder Brenda; Price Marge (Price Howlett); Daniels Jimmy (Whitham Levee District); Samson Maryann; Brockmeier Joe; Ramsey Mark (County Bank); Huston John P.; Jacob Al; Lucy Gary & Sandy; Lyon Ashley; Nordwald Mike (Ray-Carroll); Hayes Rick; Dolphin Tom (Lexington Airport); LePage Bill; [REDACTED] HQ02; Strider Corey (Goppert Financial Bank); Horgan Tom (Ameren); [REDACTED] NWK; Porter Clark (Senator McCaskill); Clemons Sam (Ray County Sheriff); Roman Al; newsdesk@kctv5.com; Gerdes Diane; Gerlach Travis; Diamond Kim; Stockton Rob; Bohl Eric (Congresswoman Hartzler); Flickner Ryan (Senator Roberts); Armstrong Mike (WaterOne); Jeff@concordiaimplement.com; Robinson Kim; Frakes Lanny; Meyer Randy; Stucker Marcus; superted@peoplepc.com; Thorson John; Gill John; Lafferty Jason; Stundebek Bernie; Safely Katie (Monsanto); Moody Wayne; Kinne Zach (Senator Blunt); Spickert Donna (Congresswoman Hartzler); [REDACTED] NWD; McNeall Ron; Woolley Leslie (Congressman Cleaver); Leimkuehler Doris; Eckelkamp Donnie; [REDACTED] HQDA; Randy Asbury; [REDACTED] NAD; Lampton Cindy (City of Orrick); Shorr David; Monks Janie (MO DNR); Bacon Bob; Alexander Terry (Consolidated North County LD); Kerperin Kevin & Bob (Osage River); Kay Morris; Marshall Gary (MO Corn Growers); Hardecke Ron; Pearce Mark (KC Star); Stundebek John & Carol; Melly Judy; Kaiser Glenn & Nancy; Smith Katie; Zeysing Robert H.; Gorrell Marcia (Marshall News); Riegel Rich; Casner Kevin (Sugartree LD); Spaunhorst Dennis; Lester Jerry; Ferguson Roger; Ludwig Dale (MO Soybean Assn.); Werle Missy; Rouse Karen; Campbell Billy (Goppert Financial Bank); Struckhoff H.; Edwards Jim; Little Erin (KMBC-TV); bmillerjr@emissourian.com; Tumbleson Todd; Leeds Terry (KCMO Water); kctv@kctv5.com; Padgett Darrel; Schnarr Steve (Missouri River Relief); Grimpo Alan; Twyman Maria Antonia; Moran Medina (WCI); Schrempf Tom; news@wdaftv4.com; riverrelief@riverrelief.org; Boss Naomi (Congressman Graves); Jacoby Karin; McNeall Raymond; Imgarten Dave (Imgarten Farms); Kirchoff Barry (City of Columbia); Berkley Jim (EPA); info@waterways.org; Jenkins Holly (Congressman Cleaver); Kempf Sherri; [REDACTED] HQ02; Womack Abner; Klingner Diaz Karla; Babb Robert; [REDACTED] HQ02; Brooks Raelene; oem@kcmo.org; Lambrecht Bill; Holdmeyer D.; Maczuk Bill; Gentry Allen; Smart Peggy; [REDACTED] MVS External Stakeholder; McMahon, John R BG NWD; Taylor Steve; Howlett David (Price Howlett); [REDACTED] NWK; Prenger Daniel (Prenger Farms); Glosemeyer Jane; Zimmerschied Brian; Highley Owen (MFA); Vickers Kyle; McQueen Patricia (Bank of Orrick); Stewart Kay (Congresswoman Hartzler); Cothen Joe (EPA Region 7); Sandidge Brent; Shorthose Grant; Johnson Tad (City of Columbia); [REDACTED] NWK; [REDACTED] NWO; Stone Mike (KMZU Radio); Walton James (KCMO Water); Ruddy Jack (Congressman Graves); Davis Paul; Johnson

To:

Sam; Nikodum Don; Brown Wayne; news@kmbc.com; Cowherd Emmalie; Vandiver Perry; Dickey Scott; Brown Chris (Congressman Luetkemeyer); Redmond Jeane (Z Bar Farms); Bruening Rose Mary; MRJIC; Kuhler Steve; [REDACTED] LRP; Mayfield Ann; Markt Carla; Heil Nelson; Sorrel David (City of Columbia); Westermeyer Kyle; Ellis Lauren (Congressman Akin); Tiemeyer Paul (Rock Port); Toelke Kelly; Bruening Bosh; Franken John (Attorney); Twyman Mike; Grisham Becky (MO Corn Growers); Wildberger Dottie (Halls Levee District); Burgess Collie; Stundebek Russ; Phillips Tim (Ray Carroll); Waters Waters Farms, Inc.; Haldeman Jeremy (Congressman Carnahan); Rhode Paul (Midwest Area Waterways, Inc.); Hershey Harry; Comodeca Mike; Olin Arvin & Joan; Macy Babette (Kissick Construction); Hafemeister Mary (Lower Chariton); Thomas Joe; Francis Cathy (Goppert Financial Bank); Riddle Kelly; Wright Derry; McMullen Dalla; Whitley Melvin; [REDACTED] NWK; Quinto Ernie (KAW Valley Drainage District); Hoffman Linda (KCMO Water); Steele Brad; Jenkins Ronald; Connor Jeffrey (Congresswoman Emerson); Erfling Wilmer; Hockemeier Max; Melzer Gary; Weber Alan; [REDACTED] MVS External Stakeholder; Noll Rich (KCMO Water); Gloe Dale (Tri County Levee District); rcityhall@aol.com; Nolker Barb (Ray Co Farm Bureau); Schwoeppe Suzanne; Nail Jeff; Fisher Sherry (AG Koster); Kinne Shane (Missouri Corn Growers); Asbury Randy (CPR); Dailey P.E. Steve (Fairfax Drainage District); Slade Kathy; [REDACTED] NWK; Blair Dennis; Clemens Jim; Wyatt Charles; Henderson Bill (Henderson Drug Store); King Garrett; Coats Derek (Senator Blunt); Schupp Mark; Sloniker Barbara; Keck J. (St. John's Levee & Drainage); Arnold Mike; Manson Nicholas; Manson Gary (Brunswick-Dalton LD); Famuliner George; Scott John (MO Department of Corrections); Luther Tim; Lauck Linda; Livers Richard; Dowdy Larry (Little River Drainage District); Wheeler Jim; Branstetter Jason (Capitol Sand); Alder Powers; Stallings Tom (Saline County); Schluter C.C.; [REDACTED] NWK; Drew John (DNR); Holloway Leslie (MO Farm Bureau); Watts Terry; news@nbcactionnews.com; Hecktor Jeremy; Merensmeyer Wade (Ray-Carroll); Hawkins Garrett (MO Farm Bureau); Zimmer Peter; Struckhoff R.; Perry Bob (Perry Ag Lab); Dunn Thomas (Gateway Arch Riverfront); Paulsmeyer Duane; Dukes Corey (Senator McCaskill); Manson Phil (Brunswick-Dalton LD); Soendker Ron (MFA); Turner Floyd (City of Columbia); Roth Steve (City of New Haven); Gibson Ron; Stundebek Matt; Gibbs Joseph; Manson Ann Edwards; Stegmann Richard (Lange-Stegmann); Deppe Richard; Perry Ernie (MODOT); Warren Beth; Mahoney Larry; Keisker Larry; Kircher Lisa; Morgan Steve; Mathews Pam (City of Columbia); Guier Nelson; Richmond Vicki (Missouri River Relief); Oberdiek Gary; Nolte Jerry (Missouri 33rd District State Rep); Trachsel C. (Reveaux Levee District); Sieck David; Meng Lanny; Wiedemeier Dan; Koenigsfeld Travis (MFA-Chamois-Morrison); Williams John; Curtis Don (HDR); Newham Kent (Ray-Carroll County Grain Growers); Roe Melissa (Congressman Graves); Engemann Steve; Blakley Ron; Glascock John (City of Columbia); Hunt Steve (City of Columbia); LePage Paul W.; Bledsoe Ron (Saline County LD); Battalager Louis & Joann; Roettger Eugene (MO Valley LD); Daniels-Murray Larry (D Bar M LLC); Duensing Doug & Carol; Lester Eric; Roller Susan; Dohrman Ben (Bartlett Grain); Klingner Michael; Waters Linda; Davis Adam (Congresswoman Hartzler); Copeland David; Nance Bob (MO 36th District State Rep.); Cieslik Larry (HDR); Stones Harold (Senator Roberts); Jasper John; Vincze Robert; Hofmann, Anthony J COL NWK; Goodwin Clive; Fricke Brad & Chery; Endsley Art & Christie; Storvick David (City of Columbia); Henry Peter (Senator Blunt); Lucietta Don (Senator Blunt); Davis Art; Pogge Frank (DFP Environmental Consulting, LLC); Knopf David; Groner H.W.; Susan@MissouriRuralServices.com; Engemann Dan (Congressman Luetkemeyer); Fletcher Marge; Fletcher John; [REDACTED] NWK; Kipping David; Lueders Debbie; [REDACTED] NWK; Imgarten Barry; Seigfreid Paul; Dickey Tommy; Brunjes Dan; Dawson Shawn; sswindler@mfa-inc.com; Knickmeyer Mary; Pope Daniel (FM Global); Matousek Mike (Congressman Graves); Vinning Rob; Glosemeyer Maurice; Morris Mitch; Massman John; Forck Kelly (Cole Junction LD); Perry Meagan; Pierson Patrick; Hurst Blake (Missouri Farm Bureau); Poldberg Mindy (Iowa Corn Growers); Blechinger, Erik T NWK; [REDACTED] NWK; Eagleton Tim (FM Global); Duncan Steve (Central Technology Services); Buhrmester Rex; Linneman Leland (Dalton-Brunswick Levee District); Thomas, Kimberly S NWK; [REDACTED] HQ; Johnson Glenda; Ebersole Atalie (Congresswoman Emerson); Rehmeier Dean (Augusta Bottom Levee Protection Assoc.); [REDACTED] NWK; Maxwell Wes (FM Global); Stouffer Bill; Ketz Kris (KMBC TV-9); Berendzen Buffy (MO Dept of Ag); Dieckmann Phillis (City of Levasy); Klenklen Chris (MO Dept. of Ag); Riegel Dave; Richards Eugene (KTIS Radio); Littleton Bob; Jeff Jeff; Lensing, Brian MVS External Stakeholder; Grugett George (Lower Mississippi Flood Control Association); Carlson CeCe; Foreman Jarrell (Ray County FSA); Williamson Bob (KCMO Water); Bell Tom (USFWS); Poche David; Nail David; Kuhlman William; Klippenstein Brian (Senator Blunt); Kucera Ron; Humphreys David; Lyberger Jesse; Wolfe Alan (ESI Contracting Corp); Rogers Mac (Ray County Ambulance District); geibpallets@yahoo.com; [REDACTED] NWK; Durham David (Ray Co. LD #2); Turley Sherrie (MODOT); Plattner Aaron;

To: Dawson John; Beacom William; Cruse, Lester External Stakeholder; Elmore John; Farley Mike (Consolidated North County LD); Johnson Jerilyn; Proffitt Jim; Diederich Stephen (Wilton Landowner's L&D); Fuhrman Dan; Twyman Tim; [REDACTED] NWK; Bryan Bill (MO DNR); McQueen Patricia
Subject: ***Holt County Situation Report***
Attachments: 20110622153731.pdf; ATT760169.htm

Holt County Situation Report

Friends the attached report details levee failures and flooding in the Holt County, Missouri area.

Tom Waters
Missouri Levee & Drainage District Association

Situation Report - Holt County EOC - June through 6-22-2011 – 11 a.m.

North to South in Holt County:

Mill Creek levee has failed sending floodwaters to Corning. The town has estimated 8 feet of water with heavy current. That breach has inundated everything north of the Big Tarkio River and is threatening I-29 south of the 99 mm exit.

Big Tarkio River has breached on the eastern side of the levee about 1 mile south of the 111 Highway bridge west of Craig. This breach is pushing water across 99 acres toward the City of Craig from the southwest and has crossed 111 Highway to the north.

The Union Township Levee along the Missouri River failed first and has had subsequent failures. This water was originally held back by the privately constructed High Bank Levee in the middle of Union Township district farm acreage. The High Bank levee overtopped and then burst sending heavy water to the east and south and now is backing into Craig across 99 acres. 111 Highway between Craig and Big Lake is crossed by water.

Levee District #10 Levee on the west side of Big Lake failed in numerous places inundating the Village of Big Lake and surrounding area north and south of 159 Highway and pushing water to the east to the west bank of the Little Tarkio Creek.

A breach on a private section of levee south of 159 Highway south of Big Lake breached adding water to the floodway west of the mouth of the Little Tarkio Creek.

Water is currently deeper at Big Lake than any previous time with at least 7 inches more water in elevated home structures than in 2010 (previous historic height).

An active flood fight is underway to hold waters out of Craig on the south and west. Mitigation measures are being added to the City of Craig water treatment facility – deemed a critical piece of infrastructure. A four-foot earthen levee is being constructed today (6-22-2011) by Holt County forces with dirt hauled into the sight. That levee will be packed, plastic and sandbags will fortify it and Foley pumps are planned to keep water from the inner ring as a last resort. This water facility serves the City of Craig, Village of Big Lake and rural water district customers.

The Village of Fortescue has water from the Little Tarkio Creek in Levee District #14 pushing into the town, situated on the eastern side of the creek. Water is on P Highway and is leaking from a 16" tube near the Burlington Northern and Santa Fe Railroad Tracks. Floodwater from the western side of the Little Tarkio Creek is spilling over the western levee and into the creek itself, causing the creek to rise and push against the eastern side. Imminent failure of the eastern levee is anticipated, which will allow floodwaters to go into the Villages of Bigelow and Fortescue.

Heavy construction work is underway on the eastern Little Tarkio Creek levee north of 118 Highway west of Bigelow. Seepage and a MoDOT tube are allowing water to flow to the eastern side. Impacting

ag land currently and could reach the Village of Bigelow if not stemmed. Eastern side levee failure in this area is possible.

South of Fortescue begins Levee District #9. Board members expected failure of this levee overnight last night. There is no freeboard left on a section of levee in the southern section. Heavy sand boils are pumping water and sand at the toe of the levee and structural failure along with overtopping is expected at any moment.

5-mile Lane – an inner tributary that makes up the eastern boarder of Levee District #9 has overtopping on both the east and west sides of the levee approximately ½ mile north of Holt Road 290. The levee top roadway on the eastern side is named Ivy Road. This is impacting ag acres only at this time.

The next Levee District is Cannon Levee and Drainage District. Their board members are reporting heavy sand boils, about 1 foot of freeboard near the mouth of the Kimsey Creek as the southern end of the district. With anticipated rise on the Missouri River based on releases at Gavin's Point of ¾ to 1 foot this levee will overtop and or breach in the coming days.

The two remaining levees to the south are Forest City Levee District and Levee District #7, both are federal levees with high banks and set backs. Both levees have over 5 feet of freeboard at this time, but are being monitored for sand boils. A heavy construction project funded and managed by the Corps is underway on Forest City Levee. They are hauling 3000 truckloads of sand to the levee to stem sand boils that started during the 2010 flooding event.

The City of Forest City is actively sandbagging today to finish work around the city's water treatment facility. This facility lies on the east side of Kimsey Creek and provides water to the city of Forest City, city of Oregon and rural water district customers. It appears that floodwater will reach the western bank of the Kimsey creek in the coming week if Cannon levee fails. A nursing home and the county seat, jail, businesses, etc will be impacted if the clean drinking supply is reached by floodwaters. Provisions have been made to secure the facility and are ongoing.

Evacuations are complete in Big Lake and Corning, where home structures are filled with feet of water. A few residents remain in the Big Lake area of their own choosing. Evacuations of Craig and Fortescue are nearly complete as the roadways are still passable and people finish moving belongings. The Village of Bigelow was notified yesterday to evacuate and that work is underway today.

The Red Cross shelter is open at the First Christian Church in Mound City and is currently housing 1 person overnight. Approximately 600 persons are in evacuation state, but are self-sheltering at this time.

We anticipate additional security, monitoring and social services needs in the future.

All subject to change with a thunderstorm!

Kathy J. Kunkel, Holt County Clerk/EOC

[REDACTED]

From: U.S. Army Corps of Engineers, Northwestern Division [monique.l.farmer@usace.army.mil]
Sent: Wednesday, June 22, 2011 4:37 PM
To: Farhat, Jody S NWD02
Subject: Portions of the Nebraska Tailwaters Campground will be closed due to increased flows into the area
Attachments: Nebrasks Tailwaters Campground Closed.pdf

http://us.vocuspr.com/Publish/520028/vcsPRAsset_520028_348656_c5220867-6ce9-45c0-83c2-dfd9e54e58a1_0_USACE_LOGO_small.jpg

BUILDING STRONG®

NEWS RELEASE

For Immediate Release: June 22, 2011
Contact: [REDACTED], Natural Resource Manager
Phone: [REDACTED]

Portions of the Nebraska Tailwaters Campground will be closed due to increased flows into the area

Yankton, S.D.- Due to the increased water flows from Gavins Point Dam, which are expected to reach 160,000 cfs by Thursday June 23, 2011, the trailer camping sites of the Nebraska Tailwaters Campground will be closed out of concern for public safety.

It is expected that water from these increased releases will inundate the entrance road to this area of the campground. The day-use area from the boat ramp west to the end of the parking lot will remain open. The tent camping sites on the west end will also remain open.

Cottonwood Campground, which is accessed off of the Toe Road, will remain open for camping.

For general questions regarding our flood response information efforts, please call (402) 996-3877 or e-mail us at MRJIC@usace.army.mil.

Please follow us on Facebook (www.facebook.com/OmahaUSACE <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1964293x-1856117>>) (www.facebook.com/OperationMightyMo <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1964292x-2376432>>) and Twitter (www.twitter.com/OmahaUSACE <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1964291x-412428>>) for the latest updates regarding our flood response operations.

You can also find flood inundation maps and local emergency management contact information on our social media sites as well as our district Web site at <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1964290x-932744>> .

View daily and forecasted reservoir and river information on the Water Management section of the Northwestern Division homepage at: <http://www.nwd-mr.usace.army.mil/rcc>.

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<http://www.nwo.usace.army.mil/> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1964289x-1453060>>

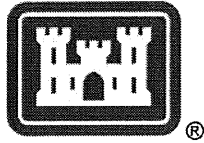
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U.S. Army Corps of Engineers, Northwestern Division, 1616 Capitol Ave., Ste. 9000, Omaha, NE 68102 United States



U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

NEWS RELEASE

For Immediate Release: June 22, 2011

Contact: Gary Ledbetter, Natural Resource Manager

Phone: 402-667-2540

Portions of the Nebraska Tailwaters Campground will be closed due to increased flows into the area

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You can also find flood inundation maps and local emergency management contact information on our social media sites as well as our district Web site at <http://www.nwo.usace.army.mil>.

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U.S. Army Corps of Engineers – Northwestern Division, 1616 Capitol Ave., Omaha, Neb. 68102

<http://www.nwo.usace.army.mil/>

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YouTube youtube.com/OmahaUSACE and Flickr flickr.com/OmahaUSACE

[REDACTED]

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 4:34 PM
To: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Bertino,
John J Jr NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Flood Report \$20 Fort Peck (UNCLASSIFIED)
Attachments: Fort Peck Dam Surveillance Activities 21 June 11.docx

Classification: UNCLASSIFIED
Caveats: NONE

Releases from Fort Peck are 60,000 cfs with 50,000 cfs through the Spillway and 10,000 cfs through the power plant. Unit #3 was taken out of service this morning because of high guide bearing temperatures. Power house staff are investigating the problem. This caused the spillway discharge to increase to 50,000 cfs from 47,000 cfs.

Fort Peck's pool elevation was 2252.81 this morning. Our 24 hour surveillance continues with no issues on the dam or spillway. Surveillance Activities are attached.

[REDACTED] and [REDACTED] departed this morning to be replaced by [REDACTED]
[REDACTED] and [REDACTED]

Attached is surveillance report for past day.

[REDACTED], P.E.
U.S. Army Corps of Engineers
Operations Project Manager
Fort Peck Project
Fort Peck, Montana 59223
PH: [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

**Fort Peck Dam
High Reservoir Surveillance Activities
21 June 2011**

- Reservoir Elevation: 2251.89 as of 0100.
- Project Releases: 46,690 cfs from spillway and 13,720 cfs from the powerhouse as of 0100. Note that these releases reflects a reduction of 5,000 cfs from the spillway at 0800 on 20 June 11.
- Coulee Inspection:
 - Coulees D and E: No change. There are large areas where the ground is saturated with standing water. The roadway was dry.
 - Coulee A: No change. The coulee was dry.
 - Coulee B: No change. The lower reaches of the coulee were muddy.
 - Coulee C: No change. The area where was a seep from a broken drainage line has stopped flowing since the line was replaced. The area the seepage is still muddy.
- Upstream Slope: The riprap and the upstream slope remains unchanged. The upstream slope is in good condition with no erosion or riprap displacement identified.
- Embankment Toe and Relief Well Area:
 - The embankment toe area and the area between the rock toe and the relief channel was inspected. There was no seepage or other conditions of concern identified.
 - Relief Well Channel: The water in the relief well channel remains clear.
 - The left abutment of the main embankment was inspected with no areas of concern identified.
- Right Abutment Area: No change from 20 June. The lower seepage area was still wet with standing water and saturated soil. At the upper area, there was only water standing in surface depressions. If the upper area continues to dry out, it can be reasonably concluded that this seepage area is not fed by the reservoir, but rather water from the saturated abutment due to precipitation exiting the slope at that location.
- Dike Section:
 - The seepage area at Station 95 – 100: No change. This area was wet in the ditch at the dike section toe. This area has been well documented in past inspection reports and appears to fluctuate slightly with precipitation runoff. Although this is a fairly large area with ponded water, there was no flow evident in the spall lined ditch.
 - Station 115: Essentially, there was no change since flags were placed in this area on 5 June. Wet, saturated soil with little flow. The flow through a nearby road culvert, which carries flow from a large area of the dike section,

Fort Peck Dam
High Reservoir Surveillance Activities
21 June 2011

including the Station 115 area, has not shown any changes in flow rate over the past three weeks.

- Station 162: No change.
- Station 169: No change from 21 June. The small boil was monitored periodically throughout the day. The seepage was steady but flow did not appear to increase. This boil was first identified at Station 169 on 21 June. The boil is small in diameter, approximately the diameter of a pencil. There was minimal vertical flow, a trickle. The seepage water is clear with no movement of material. This area will continue to be closely monitored. For additional pertinent information, see the 20 June, High Reservoir Surveillance Activities report.

- Spillway:
 - The downstream channel Bearpaw shale slopes continue to erode and fall into the outlet channel, but at a greatly reduced rate.
 - Observed spillway hydraulic jump from both sides and from downstream right observation point. Jump appears to be in approximately the same location as on 20 June after the spillway flows were reduced by 5,000 cfs.
 - The spillway tailwater elevation was measured using water level indicator. Water surface elevation is approximately the same as yesterday (20 June 2011) which is about 2-feet higher than previous days. Reason for higher tailwater is still unknown.
 - The riprap sections on the upstream end of the spillway approach walls were inspected. These sections, which were extended on 3 June 11 due to high wave action, appeared to be in good condition with no riprap displacement identified.
- Instrumentation Readings Obtained on 20 June:
 - Relief Well Flows
 - Left Abutment Relief Wells
 - Selected Seepage Pipes
 - Read twice, (at 1700 and 1900) East, West and Coulee "D" Flumes, and Toe Drain Weir Box.
 - Range 18.1, 19.5, and 20 relief well piezometers
 - Downstream water table piezometers.
 - Range 35, 50, and 60 seepage pipes
 - Other various embankment seepage pipes

NWO

From: Williamson, Eileen L NWO
Sent: Wednesday, June 22, 2011 4:20 PM
To: DLL-CENWD Zorinsky-Floor 3; DLL-CENWO-ALL Employees
Subject: FW: Riverwatch June 22, 2011 #2011MoRivFlood (UNCLASSIFIED)
Attachments: 622NR-RIVERWATCH6-11.pdf

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----

From: U.S. Army Corps of Engineers Omaha District [mailto:eileen.l.williamson@usace.army.mil]
Sent: Wednesday, June 22, 2011 4:09 PM
To: Williamson, Eileen L NWO
Subject: Riverwatch June 22, 2011 #2011MoRivFlood

Missouri River Mainstem Reservoir Bulletin (Updated 22 Jun; 1000 CDT)

Fort Peck (In operation since 1940)

Midnight Elevation

- * 2251.8 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 47,000 cfs (21 Jun)
- * 50,000 cfs (20 Jun)

Daily Avg. Release

- * 60,200 cfs (21 Jun)
- * 61,800 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)

- * 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been decreased to 60,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.

Record Pool Elevation (Year)

- * 2251.6 msl (1975)

Record Flow (Year)

- * 35,000 cfs (1975)

Projected Record Flow (Date)

- * 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

- * 1854.3 ft msl
- * 24-hr Change (+0.2 ft)

Daily Avg. Inflow

- * 192,000 cfs (21 Jun)
- * 188,000 cfs (20 Jun)

Daily Avg. Release

- * 150,400 cfs (21 Jun)
- * 150,200 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)

- * 1854 ft msl

River Stage (Bismarck)

- * 18.89 (0715 CDT 22 Jun)
- * Flood stage - 16 ft
- * 18.85 (0815 CDT 21 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 150,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.
- * Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

- * 1854.8 msl (1975)

Record Flow (Year)

- * 65,000 cfs (1975)

Projected Record Flow (Date)

- * 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

- * 1619.3 ft msl
- * 24-hr Change (+0.4 ft)

Daily Avg. Inflow

- * 218,000 cfs (21 Jun)
- * 201,000 cfs (20 Jun)

Daily Avg. Release

- * 153,900 cfs (21 Jun)
- * 160,300 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1617 ft msl - 1620 ft msl

Top of Spillway Gates(closed)

* 1620 ft msl

River Stage (Pierre)

* 19.71 (0731 CDT 22 Jun)

* Flood stage - 15 ft

* 19.81 (0730 CDT 21 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 160,000 cfs.

* Reservoir is currently in the exclusive flood control zone.

* Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

* 1618.7 msl (1995)

Record Flow (Year)

* 59,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

* 1421.0 ft msl

* 24-hr Change (+1.1 ft)

Daily Avg. Inflow

* 195,000 cfs (21 Jun)

* 172,000 cfs (20 Jun)

Daily Avg. Release

* 162,900 cfs (21 Jun)

* 158,900 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1422 ft msl - 1423 ft msl

Top of Spillway Gates(closed)

* 1423 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 165,000 over the next 24 hours.

* Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 165,000 cfs (Late June)

Fort Randall (In operation since 1953)

Midnight Elevation

* 1368.0 ft msl

* 24-hr Change (+1.7 ft)

Daily Avg. Inflow

* 213,000 cfs (21 Jun)

* 200,000 cfs (20 Jun)

Daily Avg. Release

* 139,600 cfs (21 Jun)

* 143,500 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates(closed)

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 157,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 157,000 cfs (Late June)

Gavins Point (In operation since 1955)

Midnight Elevation

* 1208.1 ft msl

* 24-hr Change (+0.7 ft)

Daily Avg. Inflow

* 159,000 cfs (21 Jun)

* 150,000 cfs (20 Jun)

Daily Avg. Release

* 150,900 cfs (21 Jun)

* 150,000 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates(closed)

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs over the next two days.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1951333x1160769>>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

24-hr forecast (Glasgow, MT)

Today: Isolated showers and t-storms after 3pm. Areas of fog before 9am, otherwise mostly sunny, high near 78. East southeast wind 5 to 8 mph. Chance of precipitation is 20%.

Tonight: Isolated showers and t-storms before 9pm. Partly cloudy, low around 57. East southeast wind 9 to 11 mph. Chance of precipitation is 20%.

Thursday: Mostly sunny, high near 82. East southeast wind 11 to 14 mph increasing to 19 to 22 mph. Winds could gust as high as 30 mph.

24-hr forecast (Williston, ND)

Today: Mostly sunny, high near 73. North wind 6 to 9 mph.

Tonight: Mostly clear, low around 53. North wind at 9 mph becoming east.

Thursday: Sunny, high near 75. Light wind becoming southeast 10 to 13 mph.

24-hr forecast (Riverdale, ND)

Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind around 17 mph, with gusts as high as 24 mph.

Tonight: 20% chance of showers before 1am. Partly cloudy, with a low around 52. North wind 11 to 14 mph becoming calm. Winds could gust as high as 20 mph.

Thursday: Sunny, high near 73. Calm wind becoming east 4 to 7 mph.

24-hr forecast (Washburn, ND)

Today: 20% chance of showers after 1pm. Partly sunny, high near 68. North wind 17 to 20 mph, with gusts as high as 28 mph.

Tonight: 20% chance of showers before 1am. Partly cloudy, low around 51. North wind 12 to 15 mph becoming calm. Winds could gust as high as 21 mph.

Thursday: Sunny, high near 73. North wind 3 and 7 mph.

24-hr forecast (Bismarck/Mandan, ND)

Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind 17 to 21 mph, with gusts as high as 29 mph.

Tonight: 20% chance of showers before 1am. Partly cloudy, low around 50. North wind 13 to 16 mph becoming light. Winds could gust as high as 23 mph.

Thursday: Sunny, high near 75. North wind 3 to 7 mph.

24-hr forecast (Pierre, SD)

Today: Mostly sunny, high near 72. North northwest wind 21 to 25 mph, with gusts as high as 34 mph.

Tonight: Mostly clear, low around 51. North northwest wind 17 to 20 mph decreasing to 6 to 9 mph.

Thursday: Sunny, high near 75. North northwest wind around 8 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Mostly sunny, high near 73. North northwest wind 21 to 25 mph, with gusts as high as 34 mph.

Tonight: Mostly clear, low around 51. North northwest wind 15 to 18 mph decreasing to 6 to 9 mph.

Thursday: Sunny, high near 75. North northwest wind around 8 mph.

24-hr forecast (Lower Brule, SD)

Today: Isolated showers before 1pm. Partly sunny, high near 71. North northwest wind 22 to 25 mph, with gusts as high as 36 mph. Chance of precipitation is 20%.

Tonight: Partly cloudy, low around 52. North northwest wind 8 to 17 mph.

Thursday: Sunny, high near 75. North northwest wind 8 to 10 mph.

24-hr forecast (Chamberlain, SD)

Today: Slight chance of showers before 1pm. Mostly cloudy, high near 72. North northwest wind 23 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 20%.

Tonight: Partly cloudy, low around 52. North northwest wind 8 to 16 mph.

Thursday: Sunny, high near 76. North northwest wind 8 to 10 mph.

24-hr forecast (Yankton, SD)

Today: Showers likely, mainly before 1pm. Cloudy, high near 69. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 inch possible.

Tonight: Cloudy, then gradually becoming partly cloudy, with low around 54. Northwest wind 11 to 18 mph, with gusts as high as 28 mph.

Thursday: Sunny, high near 75. Northwest wind 13 to 16 mph.

24-hr forecast (Sioux City, IA)

Today: Showers likely, mainly before 1pm. Cloudy, high near 67. Northwest wind around 23 mph, with gusts as high as 32 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 inch possible.

Tonight: Slight chance of showers before 1am. Cloudy, then gradually becoming partly cloudy, low around 55. Northwest wind 10 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 20%.

Thursday: Mostly sunny, high near 74. Northwest wind 13 to 17 mph, with gusts as high as 26 mph.

24-hr forecast (Omaha, NE)

Today: 30% chance of showers, mainly before 1pm. Cloudy, high near 70. Northwest wind 20 to 22 mph, with gusts as high as 31 mph. New rainfall amounts 0.1 inch possible.

Tonight: Mostly cloudy, gradually becoming clear, low around 58. Northwest wind 8 to 17 mph, with gusts as high as 26 mph.

Thursday: Sunny, high near 75. Northwest wind 11 to 15 mph, with gusts as high as 22 mph.

Source of information: <http://www.weather.gov/> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1951332x641200>>

Internet: <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1951331x121631>>

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U.S. Army Corps of Engineers Omaha District, 1616 Capitol Ave, Omaha, NE 68102 United States

Classification: UNCLASSIFIED

Caveats: NONE



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 22 Jun; 1000 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2251.8 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow 47,000 cfs (21 Jun) 50,000 cfs (20 Jun) Daily Avg. Release 60,200 cfs (21 Jun) 61,800 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been decreased to 60,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1854.3 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 192,000 cfs (21 Jun) 188,000 cfs (20 Jun) Daily Avg. Release 150,400 cfs (21 Jun) 150,200 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) 1854 ft msl River Stage (Bismarck) 18.89 (0715 CDT 22 Jun) - Flood stage – 16 ft 18.85 (0815 CDT 21 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. - Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1619.3 ft msl 24-hr Change (+0.4 ft) Daily Avg. Inflow 218,000 cfs (21 Jun) 201,000 cfs (20 Jun) Daily Avg. Release 153,900 cfs (21 Jun) 160,300 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) 1620 ft msl River Stage (Pierre) 19.71 (0731 CDT 22 Jun) - Flood stage – 15 ft 19.81 (0730 CDT 21 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 160,000 cfs. - Reservoir is currently in the exclusive flood control zone. - Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1421.0 ft msl 24-hr Change (+1.1 ft) Daily Avg. Inflow 195,000 cfs (21 Jun) 172,000 cfs (20 Jun) Daily Avg. Release 162,900 cfs (21 Jun) 158,900 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 165,000 over the next 24 hours. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 165,000 cfs (Late June)	Midnight Elevation 1368.0 ft msl 24-hr Change (+1.7 ft) Daily Avg. Inflow 213,000 cfs (21 Jun) 200,000 cfs (20 Jun) Daily Avg. Release 139,600 cfs (21 Jun) 143,500 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 157,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 157,000 cfs (Late June)	Midnight Elevation 1208.1 ft msl 24-hr Change (+0.7 ft) Daily Avg. Inflow 159,000 cfs (21 Jun) 150,000 cfs (20 Jun) Daily Avg. Release 150,900 cfs (21 Jun) 150,000 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs over the next two days. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Late June)

Release and inflow figures include a + or – 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

Fort Peck	Garrison	Osage	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Isolated showers and t-storms after 3pm. Areas of fog before 9am, otherwise mostly sunny, high near 78. East southeast wind 5 to 8 mph. Chance of precipitation is 20%. Tonight: Isolated showers and t-storms before 9pm. Partly cloudy, low around 57. East southeast wind 9 to 11 mph. Chance of precipitation is 20%. Thursday: Mostly sunny, high near 82. East southeast wind 11 to 14 mph increasing to 19 to 22 mph. Winds could gust as high as 30 mph. 24-hr forecast (Williston, ND) Today: Mostly sunny, high near 73. North wind 6 to 9 mph. Tonight: Mostly clear, low around 53. North wind at 9 mph becoming east. Thursday: Sunny, high near 75. Light wind becoming southeast 10 to 13 mph.	24-hr forecast (Riverdale, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind around 17 mph, with gusts as high as 24 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, with a low around 52. North wind 11 to 14 mph becoming calm. Winds could gust as high as 20 mph. Thursday: Sunny, high near 73. Calm wind becoming east 4 to 7 mph. 24-hr forecast (Washburn, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 68. North wind 17 to 20 mph, with gusts as high as 28 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, low around 51. North wind 12 to 15 mph becoming calm. Winds could gust as high as 21 mph. Thursday: Sunny, high near 73. North wind 3 and 7 mph.	24-hr forecast (Pierre, SD) Today: Mostly sunny, high near 72. North northwest wind 21 to 25 mph, with gusts as high as 34 mph. Tonight: Mostly clear, low around 51. North northwest wind 17 to 20 mph decreasing to 6 to 9 mph. Thursday: Sunny, high near 75. North northwest wind around 8 mph. 24-hr forecast (Ft. Pierre, SD) Today: Mostly sunny, high near 73. North northwest wind 21 to 25 mph, with gusts as high as 34 mph. Tonight: Mostly clear, low around 51. North northwest wind 15 to 18 mph decreasing to 6 to 9 mph. Thursday: Sunny, high near 75. North northwest wind around 8 mph.	24-hr forecast (Lower Brule, SD) Today: Isolated showers before 1pm. Partly sunny, high near 71. North northwest wind 22 to 25 mph, with gusts as high as 36 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 52. North northwest wind 8 to 17 mph. Thursday: Sunny, high near 75. North northwest wind 8 to 10 mph.	24-hr forecast (Chamberlain, SD) Today: Slight chance of showers before 1pm. Mostly cloudy, high near 72. North northwest wind 23 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 52. North northwest wind 8 to 16 mph. Thursday: Sunny, high near 76. North northwest wind 8 to 10 mph.	24-hr forecast (Yankton, SD) Today: Showers likely, mainly before 1pm. Cloudy, high near 69. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 inch possible. Tonight: Cloudy, then gradually becoming partly cloudy, with low around 54. Northwest wind 11 to 18 mph, with gusts as high as 28 mph. Thursday: Sunny, high near 75. Northwest wind 13 to 16 mph. 24-hr forecast (Sioux City, IA) Today: Showers likely, mainly before 1pm. Cloudy, high near 67. Northwest wind around 23 mph, with gusts as high as 32 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 inch possible. Tonight: Slight chance of showers before 1am. Cloudy, then gradually becoming partly cloudy, low around 55. Northwest wind 10 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 20%. Thursday: Mostly sunny, high near 74. Northwest wind 13 to 17 mph, with gusts as high as 26 mph.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind 17 to 21 mph, with gusts as high as 29 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, low around 50. North wind 13 to 16 mph becoming light. Winds could gust as high as 23 mph. Thursday: Sunny, high near 75. North wind 3 to 7 mph.				24-hr forecast (Omaha, NE) Today: 30% chance of showers, mainly before 1pm. Cloudy, high near 70. Northwest wind 20 to 22 mph, with gusts as high as 31 mph. New rainfall amounts 0.1 inch possible. Tonight: Mostly cloudy, gradually becoming clear, low around 58. Northwest wind 8 to 17 mph, with gusts as high as 26 mph. Thursday: Sunny, high near 75. Northwest wind 11 to 15 mph, with gusts as high as 22 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

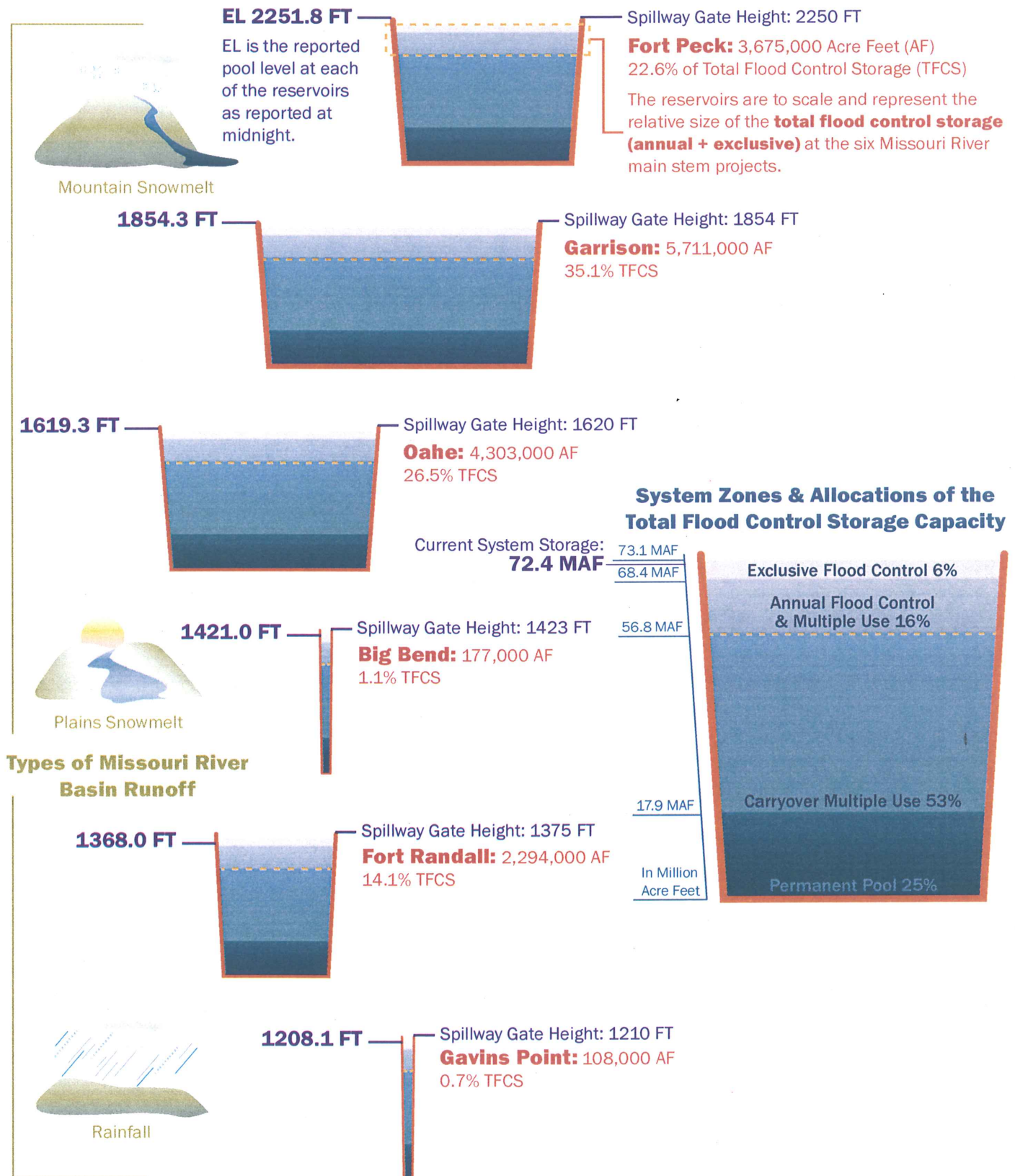
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Missouri River Main Stem Reservoir System

Midnight Elevation (EL) Forecast: June 22, 2011 (feet above mean sea level)



NWO

From: Fong, Cecily S. [cfong@nd.gov]
Sent: Wednesday, June 22, 2011 4:11 PM
Subject: Missouri River Claims First Home in Burleigh County

Importance: High

Description: BurleighCountyLogo.JPG NEWS RELEASE

FOR IMMEDIATE RELEASE

Contact: Mary H. Senger
Burleigh County Emergency Manager
222-6727

June 22, 2011

Missouri River Claims First Home in Burleigh County

Bismarck, ND—Law enforcement has not been able to make contact with the owners but has confirmed the address as 9806 Island Road. The residents had previously evacuated when voluntary evacuation was requested.

Michael Gunsch, District Engineer for the Burleigh County Water Resource District, explains, "A scour hole developed between two segments of rip-rap on the Missouri River. When the water overtopped the existing bank stabilization, it eroded the upper bank and undermined the foundation of the residence. The risk for continued river bank erosion could result in additional failures along the bank, placing additional residences at risk."

[REDACTED]

From: [REDACTED] HQ@NWO
Sent: Wednesday, June 22, 2011 1:43 PM
To: Farhat, Jody S NWD02
Subject: RE: Your quote (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

THANK YOU

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Wednesday, June 22, 2011 1:39 PM
To: [REDACTED] HQ@NWO
Subject: RE: Your quote (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Works for me!

-----Original Message-----

From: [REDACTED] HQ@NWO
Sent: Wednesday, June 22, 2011 1:19 PM
To: Farhat, Jody S NWD02
Subject: Your quote (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:

Is the following accurate (or moderately close!) and might I use it as a quote from you . .
. or, feel free to edit as appropriate.

Jody Farhat, Chief of the USACE-NWD Missouri River Management Division, explained, "There's no simple prescriptive manual for this process. There are a plethora of impacting variables. Just a few of them are the amounts of past and projected rainfall, quantity and density of snowpack and anticipation of when it will melt, potential storage volume of reservoirs, their present state as relative to that capacity, water release adjustments and the myriad of dynamics related to reservoirs downstream."

Thank you very much.

[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: [REDACTED] MAJ NWD
Sent: Wednesday, June 22, 2011 1:21 PM
To: Farhat, Jody S NWD02
Subject: gaining storage

1. When you say "gaining storage" does that mean more storage space becoming available in reservoirs?
2. By increasing to 160kcfs and keeping that level until August, is that just to evacuate the water from the recent rain event? It does not seem like it would take 45 days to evacuate an additional 4 inches? Or in other words, why wouldn't we just evacuate enough to be back on track for the 150k? If it requires a long answer, no worries, I was just thinking about that today. By my calculations an additional 10,000cfs amounts to a significant additional amount being released... more than it should take to evacuate a small 4inch rain event..

V/R

[REDACTED]
Contingency Operations Officer
Readiness and Contingency Operations
Northwestern Division
US Army Corps of Engineers
Desk: [REDACTED]
Cell: [REDACTED]
[REDACTED]@usace.army.mil
[REDACTED]@usace.army.smil.mil
Emergency Satellite Phone: [REDACTED] Emergency Cell: [REDACTED]

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[REDACTED] NWO

From: [REDACTED]@NWO
Sent: Wednesday, June 22, 2011 1:19 PM
To: Farhat, Jody S NWD02
Subject: Your quote (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:

Is the following accurate (or moderately close!) and might I use it as a quote from you . .
. or, feel free to edit as appropriate.

Jody Farhat, Chief of the USACE-NWD Missouri River Management Division, explained, "There's no simple prescriptive manual for this process. There are a plethora of impacting variables. Just a few of them are the amounts of past and projected rainfall, quantity and density of snowpack and anticipation of when it will melt, potential storage volume of reservoirs, their present state as relative to that capacity, water release adjustments and the myriad of dynamics related to reservoirs downstream."

Thank you very much.

[REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: Lester Cruse [Lester.Cruse@ergon.com]
Sent: Wednesday, June 22, 2011 1:11 PM
To: Bill Beacom; Bill Jackson; Carl Clark; Chad; Dave Dewey; David Smith; Doug Clark; Doug Halbert; [REDACTED] MVS External Stakeholder; Garland; Jason Branstetter; John Drew; Katie Safley; Kevin Holcer; Kip; Larry Reddick; Cruse, Lester External Stakeholder; [REDACTED] LRP; Mike Olson; [REDACTED] MVS External Stakeholder; Pam Lawhon; Paul Dolak; Randy Asbury-CRP; Randy Canfield; Ray Bohlken; Roger Harris; Steve Engemann; Steve Engemann WK; BMCM Dean Smith; Coder, Justin S USCG; CDR Steven Teschendorf; Cpt Steve Hudson; [REDACTED] LCDR [REDACTED]; LCDR Scott Stoermer; Scott Adler; [REDACTED] NWD; [REDACTED] MVS; [REDACTED] NWK; [REDACTED] NWK; Farhat, Jody S NWD02; [REDACTED] NWK; [REDACTED] NWD02; [REDACTED] MVD; [REDACTED] NWD02; [REDACTED] HQ02; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] MVS; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Missouri River WAP-HW trigger Table for 06-22-2011
Attachments: MO RIV WAP HW Trigger Table June 22, 2011.xls

Missouri River Conference Call at 1630 CDT June 22, 2011 to discuss any changing water and weather conditions. Call in number is 866-653-4587 <tel:866-653-4587> Pin 5309349#. Thanks
Lester Cruse

Magnolia Marine Transport Company
Captain Lester Cruse III
Port Captain
Office: (800) 696-5921 24-Hour Number
Desk: (601) 802-8602
Cell: (601) 831-1406
Fax: (601) 638-8475

lester.cruse@ergon.com

lcruseiii@gmail.com

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Tough times never last, but tough people do with Gods Help!

[REDACTED] NWO

From: [REDACTED] NWD
Sent: Wednesday, June 22, 2011 12:38 PM
To: Farhat, Jody S NWD02
Cc: Anderson, G Witt NWD; Blechinger, Erik T NWO; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWO; [REDACTED] NWD02
Subject: Press coverage of yesterday's discussion with SD legislative committee (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody,

It sounds like the call went well yesterday with SD ... wanted to make sure you saw this press clip reporting on the meeting (below).

I noted toward the end of the article that Gov. Dugaard has assigned his general counsel and a policy advisor to "look into the reasons for the flooding" and that they attended the legislative meeting.

All the more reason for counsel to continue to stay proactively engaged with you as you attend these meetings, interviews, etc. and that we continue to have a way to centrally manage these requests to ensure consistent messages and records.

Hang in there & I will see you next week!

[REDACTED]
[REDACTED]
Attorney/Advisor, U.S. Army Corps of Engineers Office of Counsel, Northwestern Division,
Portland OR 503-808-3760 (Attorney Client and/or Attorney Work Product-- DO NOT RELEASE UNDER
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Associated Press (AP) - Pierre Bureau
Pierre, SD
06/22/2011

Corps official discusses floods with SD lawmakers A U.S. Army Corps of Engineers official told South Dakota lawmakers on Tuesday that the Missouri River reservoirs were in good shape to handle spring runoff until record rains fell upstream in May.

"The game changer was that very heavy rain that fell particularly over the eastern half of Montana during May," Jody Farhat, who leads the corps' Water Management Division in Omaha, Neb., said. "That was the wettest May on record in the eastern part of Montana.

Shortly after Farhat talked by telephone with the South Dakota legislative committee, the corps announced it will increase releases from Gavins Point Dam, the southernmost dam on the river, to 160,000 cubic feet per second by Thursday.

Farhat had told the Government Operations and Audit Committee that releases were likely to increase from the current 150,000 cfs to 160,000 cfs to match the amount expected to be discharged from Oahe Dam further upstream in central South Dakota. It also will increase the amount of water flowing through flood-threatened stretches downstream at Dakota Dunes in southeastern South Dakota and along the river in Iowa and Nebraska.

The corps has been releasing record amounts of water through the six Missouri River dams in the past few weeks to get rid of water from the unexpectedly heavy rains in eastern Montana, part of Wyoming and western areas of South Dakota and North Dakota. Runoff from an above-normal snowpack in the northern Rocky Mountains is adding to the problem.

The corps has been running 160,000 cfs of water through Oahe Dam since Sunday, but cut back releases slightly Tuesday to help deal with heavy rains in South Dakota. Releases from Oahe are likely to return to 160,000 cfs in a couple of days, Farhat said.

The corps said widespread heavy rains in South Dakota and northern Nebraska in the past two days caused higher amounts of water to flow into the reservoirs in South Dakota.

Brig Gen. John McMahon, commander of the Northwestern Division of the Army Corps of Engineers, said in a written statement that the agency had thought until this week's rains that it would be able to hold releases through the dams at 150,000 cfs.

"Unfortunately, recent rains have reduced our flexibility, and we must evacuate these floodwater to manage the remaining flood control storage in the reservoir system. As we've stated all along, heavy rain storms could result in major revisions," McMahon said.

Farhat said reservoirs in South Dakota are running out of storage space, so small increases in releases from the dams are possible. The Pierre area received about 3.4 inches of rain in the 24 hours ending Tuesday morning, and more fell throughout the day Tuesday.

"We've been on the razor's edge for a couple of weeks. That rain that fell last night is exactly the kind of thing that can push us over the edge," Farhat said.

Emergency earthen levees were built in Bismarck, N.D. and the South Dakota cities of Pierre, Fort Pierre and Dakota Dunes to protect residential areas, but not all homes along the river could be protected.

Farhat talked by telephone Tuesday to the South Dakota's Legislature's Government Operations and Audit Committee, whose members wanted to know what caused the flooding along the river.

Residents of flood-threatened areas have said they believe the corps should have released more water from the reservoirs during the winter and spring to avoid the flooding, but the lawmakers did not criticize the agency.

Sen. Jean Hunhoff, R-Yankton, said she is more worried about preventing flood damage than in assigning blame.

"I'm looking right now as to what we can do to minimize the damage that is occurring," Hunhoff said.

The two officials that Gov. Dennis Daugaard has assigned to look into the reasons for the flooding attended the legislative meeting, but they declined comment. Jim Seward, the governor's general counsel, and Jason Glodt, a policy advisor to the governor, are examining the corps' management decisions involving water releases.

Farhat said the corps released more water than normal through the dams last summer, fall and winter to get rid of excess water from last year. The amount of water in the reservoir system was cut to the target level by Jan. 28, giving the reservoirs the capacity to handle the amount of runoff for any year since 1898 except this year, she said.

"We were well positioned for runoff events this year," Farhat said.

However, the mountain snowpack grew from 115 percent of normal to about 140 percent of normal in late April, and record rains fell in Montana and other upstream areas in May, she said.

On the weekend of May 14-15, five to eight inches of rain fell in a widespread area of eastern Montana, Farhat said.

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 12:18 PM
To: [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO
Cc: DLL-CENWO-OD-FP; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: RE: Spillway Gate Openings with Unit 3 offline (UNCLASSIFIED)
Attachments: Fort Peck Spillway data (UNCLASSIFIED)

Not really sure why you are sending the PPCS screen shot for the flows. The attached has the latest spillway flow tables along with the simplified table that PPCS is using to determine flows.

-----Original Message-----

From: [REDACTED] WO
Sent: Wednesday, June 22, 2011 10:56 AM
To: Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Cc: DLL-CENWO-OD-FP; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Spillway Gate Openings with Unit 3 offline (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

All:

We had to take Unit 3 down this morning because of high guide bearing temperatures. Plant mechanics are investigating the cause. Attached are the spillway gate openings for 50,000 cfs. Flow thorough the power houses with Unit 3 shut down is 10,000 cfs.

[REDACTED], P.E.
U.S. Army Corps of Engineers
Operations Project Manager
Fort Peck Project
Fort Peck, Montana 59223
PH: [REDACTED]

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 12:12 PM
To: [REDACTED] NWO
Subject: Fort Peck Spillway data (UNCLASSIFIED)
Attachments: FP_SPILLWAY_RATING_TABLE.pdf; FTPECKS1.PDF

Classification: UNCLASSIFIED

Caveats: NONE

The FP_SPILLWAY_RATING_TABLE.pdf is the simplified table that is in PPCS. The other attachment is the data we built it from that is much more detailed.

Regards,

[REDACTED]
Computer Engineer
Army Corps of Engineers
Omaha Operations Division
[REDACTED]

Classification: UNCLASSIFIED

Caveats: NONE

Fort Peck Spillway Gate Discharge Table (Single Gate)

Pool Elevation	Gate Opening (ft)																					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
2230	0	433	812	1134	1171																	
2231	0	479	910	1291	1563																	
2232	0	521	998	1430	1811	1995																
2233	0	560	1079	1557	1989	2372	2464															
2234	0	596	1155	1674	2151	2585	2969															
2235	0	631	1226	1784	2303	2781	3216	3416														
2236	0	663	1292	1887	2444	2964	3443	3880	4077													
2237	0	694	1356	1985	2579	3136	3657	4138	4577	4678												
2238	0	724	1417	2078	2706	3300	3858	4380	4862	5304	5308											
2239	0	752	1475	2167	2828	3456	4050	4609	5132	5616	5967											
2240	0	780	1531	2253	2944	3605	4233	4828	5388	5912	6399	6653										
2241	0	806	1585	2335	3057	3748	4408	5037	5632	6194	6720	7272	7367									
2242	0	832	1637	2415	3165	3886	4577	5238	5867	6463	7026	7620	8107									
2243	0	857	1688	2492	3270	4019	4740	5431	6092	6722	7320	7953	8569	8872								
2244	0	881	1737	2567	3371	4148	4897	5618	6309	6971	7602	8272	8929	9579	9662							
2245	0	905	1785	2640	3469	4273	5049	5798	6519	7211	7874	8580	9274	9965	10476							
2246	0	928	1831	2711	3565	4394	5197	5974	6723	7444	8137	8877	9607	10337	11108	11315						
2247	0	950	1877	2780	3658	4512	5341	6144	6920	7670	8391	9164	9929	10696	11509	12176						
2248	0	972	1921	2847	3749	4627	5481	6309	7112	7889	8638	9443	10241	11043	11895	12783	13061					
2249	0	993	1965	2913	3838	4740	5618	6471	7299	8102	8879	9713	10543	11380	12270	13200	13968					
2250	0	1014	2007	2977	3925	4850	5751	6628	7481	8310	9113	9976	10837	11707	12633	13603	14553	14897				
2251	0	1035	2048	3040	4010	4957	5881	6782	7659	8512	9341	10233	11124	12025	12987	13995	14986	15847				
2252	0	1055	2089	3102	4093	5062	6009	6932	7833	8710	9564	10483	11403	12335	13331	14377	15406	16390	16819			
2253	0	1075	2129	3162	4174	5165	6133	7080	8003	8904	9781	10727	11675	12637	13666	14748	15815	16837	17757	17812		
2254	0	1094	2168	3222	4254	5266	6256	7224	8170	9093	9994	10966	11941	12932	13993	15110	16214	17273	18230	18826		
2255	0	1113	2207	3280	4333	5365	6376	7365	8333	9279	10202	11200	12202	13221	14313	15464	16603	17699	18691	19594	19860	
2256	0	1132	2245	3337	4410	5462	6493	7504	8493	9461	10407	11429	12457	13504	14626	15810	16983	18114	19141	20078	20870	20913

RS-20110603

**FORT PECK DAM SPILLWAY RATING TABLE
DISCHARGE IN CFS (ONE BAY)**

[illegible]

**FORT PECK DAM SPILLWAY RATING TABLE
DISCHARGE IN CFS (ONE BAY)**

629 Indicates Pool Elevation is greater than Top of Gate Elevation
1145 Indicates discharge is in the unstable range between weir and orifice flow

[illegible]

**FORT PECK DAM SPILLWAY RATING TABLE
DISCHARGE IN CFS (ONE BAY)**

[illegible]

**FORT PECK DAM SPILLWAY RATING TABLE
DISCHARGE IN CFS (ONE BAY)**

629 Indicates Pool Elevation is greater than Top of Gate Elevation
145 Indicates discharge is in the unstable range between weir and orifice flow

GATE LIP ELEV.	GATE DIAL INDICATOR OPENING IN FEET																									
	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0
2260.0	604	4204	4709	2390	2876	3557	4134	4705	5272	5835	6392	6945	7492	8035	8573	9106	9633	10166	10674	11186	11739	12303	12857	13428	13885	14578
2260.1	605	4206	4805	2393	2880	3562	4140	4720	5280	5844	6402	6955	7504	8048	8582	9120	9649	10172	10682	11205	11759	12324	12879	13452	14009	14605
2260.2	606	4208	4806	2397	2885	3568	4146	4723	5297	5862	6422	6977	7528	8073	8608	9149	9681	10208	10727	11241	11779	12345	12901	13475	14034	14631
2260.3	607	4209	4807	2400	2890	3573	4153	4727	5297	5862	6432	6988	7540	8086	8621	9165	9696	10223	10742	11261	11799	12366	12923	13498	14056	
2260.4	608	4211	4810	2404	2893	3578	4158	4734	5305	5871	6432	6988	7541	8098	8642	9190	9728	10256	10762	11280	11839	12408	12968	13545	14107	
2260.5	609	4213	4812	2407	2898	3584	4165	4741	5313	5879	6442	6999	7551	8112	8655	9194	9738	10266	10770	11299	11859	12429	12989	13568	14131	
2260.6	610	4215	4815	2411	2902	3589	4171	4748	5321	5888	6451	7010	7563	8112	8655	9194	9738	10266	10770	11300	11860	12430	12990	13568	14131	
2260.7	611	4216	4816	2414	2907	3594	4177	4755	5329	5897	6461	7020	7575	8124	8669	9209	9743	10273	10788	11317	11878	12449	13012	13591	14156	
2260.8	612	4218	4820	2418	2911	3599	4183	4762	5337	5906	6471	7031	7587	8137	8683	9223	9759	10281	10792	11336	11898	12470	13034	13614	14180	
2260.9	613	4219	4823	2421	2915	3605	4189	4769	5345	5915	6484	7042	7597	8148	8695	9250	9774	10306	10833	11365	11934	12507	13065	13637	14204	

FORT PECK DAM SPILLWAY RATING TABLE
DISCHARGE IN CFS (ONE BAY)

629 Indicates Pool Elevation is greater than Top of Gate Elevation
1145 Indicates discharge is in the unstable range between weir and orifice flow

GATE LIP ELEV.	GATE DIAL INDICATOR OPENING IN FEET																							
	2238.50	2239.00	2239.50	2240.00	2240.50	2241.00	2241.50	2242.00	2242.50	2243.00	2243.50	2244.00	2244.50	2245.00	2245.50	2246.00	2246.50	2247.00	2247.50	2248.00	2248.50	2249.00	2249.50	2250.00
POOL ELEV.	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0
2225.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2225.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2225.2	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
2225.3	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2225.4	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
2225.5	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
2225.6	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
2225.7	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
2225.8	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
2225.9	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
2226.0	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89
2226.1	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
2226.2	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
2226.3	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
2226.4	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154
2226.5	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172
2226.6	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
2226.7	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210
2226.8	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
2226.9	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251
2227.0	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272	272
2227.1	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294
2227.2	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317	317
2227.3	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341
2227.4	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365
2227.5	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389	389
2227.6	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414
2227.7	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440	440
2227.8	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466
2227.9	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493	493
2228.0	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520	520
2228.1	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548	548
2228.2	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576	576
2228.3	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605
2228.4	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635	635
2228.5	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665	665
2228.6	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695
2228.7	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726
2228.8	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758	758
2228.9	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789	789
2229.0	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822	822
2229.1	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855	855
2229.2	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888	888
2229.3	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922	922
2229.4	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956	956
2229.5	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991	991
2229.6	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026	1026
2229.7	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062	1062
2229.8	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098
2229.9	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134

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1145 Indicates discharge is in the unstable range between weir and orifice flow

30 October 2001

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30 October 2001

FORT PECK DAM SPILLWAY RATING TABLE
DISCHARGE IN CFS (ONE BAY)

GATE LIP ELEV.	POOL ELEV.	GATE DIAL INDICATOR OPENING IN FEET																			
		2238.50	2239.00	2239.50	2240.00	2240.50	2241.00	2241.50	2242.00	2242.50	2243.00	2243.50	2244.00	2244.50	2245.00	2245.50	2246.00	2246.50	2247.00	2247.50	2248.00
2250.0	12175	12683	13133	13683	14085	14585	14887	14887	14887	14887	14887	14887	14887	14887	14887	14887	14887	14887	14887	14887	
2250.2	12248	12705	13209	13762	14168	14668	14961	14961	14961	14961	14961	14961	14961	14961	14961	14961	14961	14961	14961	14961	
2250.4	12310	12716	13284	13782	14188	14688	14981	14981	14981	14981	14981	14981	14981	14981	14981	14981	14981	14981	14981	14981	
2250.6	12344	12811	13324	13801	14231	14726	15182	15274	15274	15274	15274	15274	15274	15274	15274	15274	15274	15274	15274	15274	
2250.8	12411	12882	13389	13840	14313	14814	15273	15465	15465	15465	15465	15465	15465	15465	15465	15465	15465	15465	15465	15465	
2250.9	12477	12952	13432	13879	14354	14857	15318	15580	15580	15580	15580	15580	15580	15580	15580	15580	15580	15580	15580	15580	
2251.0	12510	12987	13506	13985	14476	14986	15432	15847	15847	15847	15847	15847	15847	15847	15847	15847	15847	15847	15847	15847	
2251.1	12544	13022	13579	14034	14517	15028	15497	15944	15944	15944	15944	15944	15944	15944	15944	15944	15944	15944	15944	15944	
2251.2	12576	13066	13616	14072	14557	15071	15541	16022	16022	16022	16022	16022	16022	16022	16022	16022	16022	16022	16022	16022	
2251.4	12642	13125	13669	14149	14638	15157	15628	16115	16115	16115	16115	16115	16115	16115	16115	16115	16115	16115	16115	16115	
2251.6	12708	13194	13732	14225	14718	15239	15717	16207	16207	16207	16207	16207	16207	16207	16207	16207	16207	16207	16207	16207	
2251.7	12773	13258	13791	14283	14775	15281	15761	16253	16253	16253	16253	16253	16253	16253	16253	16253	16253	16253	16253	16253	
2251.9	12805	13297	13833	14339	14837	15355	15848	16344	16344	16344	16344	16344	16344	16344	16344	16344	16344	16344	16344	16344	
2252.0	12837	13331	13869	14377	14876	15406	15892	16390	16390	16390	16390	16390	16390	16390	16390	16390	16390	16390	16390	16390	
2252.1	12869	13365	13905	14414	14915	15447	15935	16435	16435	16435	16435	16435	16435	16435	16435	16435	16435	16435	16435	16435	
2252.2	12902	13399	13940	14422	14925	15459	15948	16450	16450	16450	16450	16450	16450	16450	16450	16450	16450	16450	16450	16450	
2252.4	12966	13466	14011	14526	15033	15571	16044	16570	16570	16570	16570	16570	16570	16570	16570	16570	16570	16570	16570	16570	
2252.6	13029	13533	14082	14601	15110	15654	16150	16680	16680	16680	16680	16680	16680	16680	16680	16680	16680	16680	16680	16680	
2252.7	13061	13566	14117	14638	15150	15694	16183	16704	16704	16704	16704	16704	16704	16704	16704	16704	16704	16704	16704	16704	
2252.8	13093	13600	14152	14675	15189	15734	16225	16746	16746	16746	16746	16746	16746	16746	16746	16746	16746	16746	16746	16746	
2252.9	13124	13633	14187	14711	15227	15775	16267	16789	16789	16789	16789	16789	16789	16789	16789	16789	16789	16789	16789	16789	
2253.0	13156	13666	14222	14748	15266	15815	16320	16837	16837	16837	16837	16837	16837	16837	16837	16837	16837	16837	16837	16837	
2253.1	13187	13699	14257	14785	15304	15856	16362	16881	16881	16881	16881	16881	16881	16881	16881	16881	16881	16881	16881	16881	
2253.2	13219	13732	14292	14821	15343	15896	16404	16925	16925	16925	16925	16925	16925	16925	16925	16925	16925	16925	16925	16925	
2253.4	13281	13798	14361	14890	15418	15973	16486	17013	17013	17013	17013	17013	17013	17013	17013	17013	17013	17013	17013	17013	
2253.5	13312	13831	14396	14930	15457	16016	16530	17057	17057	17057	17057	17057	17057	17057	17057	17057	17057	17057	17057	17057	
2253.6	13344	13863	14430	14966	15495	16056	16571	17100	17100	17100	17100	17100	17100	17100	17100	17100	17100	17100	17100	17100	
2253.7	13375	13896	14445	15003	15533	16096	16613	17144	17144	17144	17144	17144	17144	17144	17144	17144	17144	17144	17144	17144	
2253.8	13405	13928	14465	15039	15571	16135	16654	17187	17187	17187	17187	17187	17187	17187	17187	17187	17187	17187	17187	17187	
2253.9	13436	13961	14533	15074	15608	16175	16695	17250	17250	17250	17250	17250	17250	17250	17250	17250	17250	17250	17250	17250	
2254.0	13467	13993	14567	15110	15646	16214	16738	17293	17293	17293	17293	17293	17293	17293	17293	17293	17293	17293	17293	17293	
2254.1	13498	14026	14601	15146	15685	16255	16781	17336	17336	17336	17336	17336	17336	17336	17336	17336	17336	17336	17336	17336	
2254.2	13528	14058	14635	15182	15722	16293	16821	17381	17381	17381	17381	17381	17381	17381	17381	17381	17381	17381	17381	17381	
2254.3	13559	14089	14668	15217	15758	16324	16853	17402	17402	17402	17402	17402	17402	17402	17402	17402	17402	17402	17402	17402	
2254.4	13589	14122	14703	15253	15795	16361	16890	17452	17452	17452	17452	17452	17452	17452	17452	17452	17452	17452	17452	17452	
2254.5	13620	14154	14737	15288	15832	16410	16940	17503	17503	17503	17503	17503	17503	17503	17503	17503	17503	17503	17503	17503	
2254.6	13650	14186	14770	15324	15869	16489	17023	17572	17572	17572	17572	17572	17572	17572	17572	17572	17572	17572	17572	17572	
2254.7	13681	14218	14804	15359	15906	16568	17083	17632	17632	17632	17632	17632	17632	17632	17632	17632	17632	17632	17632	17632	
2254.8	13711	14250	14837	15394	15943	16626	17103	17652	17652	17652	17652	17652	17652	17652	17652	17652	17652	17652	17652	17652	
2254.9	13741	14281	14871	15429	15980	16665	17103	17657	17657	17657	17657	17657	17657	17657	17657	17657	17657	17657	17657	17657	

629 Indicates Pool Elevation is greater than Top of Gate Elevation
1745 Indicates discharge is in the unstable range between weir and orifice flow

1.4.5 Indicates discharge is in the unstable range between weir and orifice flow

R OPENING IN FEET															
21.1		22.0		22.5		23.0		23.5		24.0		24.5		25.0	
2246.50	2247.00	2247.50	2248.00	2248.50	2249.00	2249.50	2250.00	2250.50	2251.00	2251.50	2252.00	2252.50	2253.00	2253.50	2254.00
24130	24135	24140	24145	24150	24155	24160	24165	24170	24175	24180	24185	24190	24195	24200	24205
24555	24560	24565	24570	24575	24580	24585	24590	24595	24600	24605	24610	24615	24620	24625	24630
24607	24612	24617	24622	24627	24632	24637	24642	24647	24652	24657	24662	24667	24672	24677	24682
24822	24827	24832	24837	24842	24847	24852	24857	24862	24867	24872	24877	24882	24887	24892	24897
24238	24243	24248	24253	24258	24263	24268	24273	24278	24283	24288	24293	24298	24303	24308	24313
24333	24338	24343	24348	24353	24358	24363	24368	24373	24378	24383	24388	24393	24398	24403	24408
24393	24398	24403	24408	24413	24418	24423	24428	24433	24438	24443	24448	24453	24458	24463	24468
24434	24439	24444	24449	24454	24459	24464	24469	24474	24479	24484	24489	24494	24499	24504	24509
24484	24489	24494	24499	24504	24509	24514	24519	24524	24529	24534	24539	24544	24549	24554	24559
24544	24549	24554	24559	24564	24569	24574	24579	24584	24589	24594	24599	24604	24609	24614	24619
24594	24599	24604	24609	24614	24619	24624	24629	24634	24639	24644	24649	24654	24659	24664	24669
24644	24649	24654	24659	24664	24669	24674	24679	24684	24689	24694	24699	24704	24709	24714	24719
24694	24699	24704	24709	24714	24719	24724	24729	24734	24739	24744	24749	24754	24759	24764	24769
24744	24749	24754	24759	24764	24769	24774	24779	24784	24789	24794	24799	24804	24809	24814	24819
24794	24799	24804	24809	24814	24819	24824	24829	24834	24839	24844	24849	24854	24859	24864	24869
24844	24849	24854	24859	24864	24869	24874	24879	24884	24889	24894	24899	24904	24909	24914	24919
24894	24899	24904	24909	24914	24919	24924	24929	24934	24939	24944	24949	24954	24959	24964	24969
24944	24949	24954	24959	24964	24969	24974	24979	24984	24989	24994	24999	25004	25009	25014	25019
24994	24999	25004	25009	25014	25019	25024	25029	25034	25039	25044	25049	25054	25059	25064	25069
25044	25049	25054	25059	25064	25069	25074	25079	25084	25089	25094	25099	25104	25109	25114	25119

NWO

From: [REDACTED] NWD02
Sent: Wednesday, June 22, 2011 11:42 AM
To: [REDACTED] NWD02; [REDACTED] Jr NWO; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED] VR; Farhat, Jody S NWD02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] HQ02; [REDACTED] LRH; [REDACTED] LRH; [REDACTED] MVM; [REDACTED] LRH
Cc: [REDACTED] NWO; [REDACTED] NWD02; Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD-OMAHA; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] RMC; [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] MVD; DLL-CELRD-RBW; 'Patriciaawhitt@msn.com'; [REDACTED] MAJ HQ02; [REDACTED] CPT HQ; [REDACTED] SAW; [REDACTED] MVD; [REDACTED] LRC
Subject: RE: Missouri River Basin Water Management Division Situation Report of 6-22-11 (UNCLASSIFIED)
Attachments: Missouri River Basin Water Management Situation Report 6-22-11.docx

Classification: UNCLASSIFIED
Caveats: NONE

Any questions call me.

[REDACTED]
Northwestern Division
[REDACTED] Ofc
[REDACTED] Blkbry

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Water Management Situation Report – 6-22-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck and Garrison passing their spillway crest (continuing up on raised spillway gates) and Oahe being near its spillway crest. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Garrison and Oahe Reservoirs will likely continue. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/22/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway	Current Level feet msl	24-hr Change feet
			Gates feet msl		
Fort Peck	47.0	60.2	2250	2251.8	-0.1
Garrison	192.0	150.4	1854	1854.3	0.2
Oahe	218.0	153.9	1620	1619.3	0.4
Big Bend	195.0	162.9	1423	1421.0	1.1
Fort Randall	213.0	139.6	1375	1368.0	1.7
Gavins Point	159.0	150.9	1210	1208.1	0.7

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and has gone into surcharge. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. The stored water has entered further into the exclusive flood control zone of Fort Randall, and has entered the exclusive flood control zone of Gavins Point. At Big Bend, 100 percent of the exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time.

Table 2. Reservoir Storage Data (through 0000 hrs 6/22/11)

Reservoir	Current kAF	Total kAF	Remaining kAF	Exclusive kAF	% Excl Left
Fort Peck	18,910	18,463	-447	971	-46
Garrison	23,948	23,821	-127	1,489	-9
Oahe	22,815	23,137	322	1,102	29
Big Bend	1,677	1,798	121	60	100
Fort Randall	4,698	5,418	720	985	73
Gavins Point	397	450	53	57	93

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Big Bend will be further increased to 165,000 cfs to gain storage space at Garrison and Oahe reservoirs. Releases from Fort Randall and Gavin's Point reservoirs will also be increased to 157,000 cfs and 160,000 cfs respectively to gain storage space in Oahe and Garrison reservoirs. . Releases from Fort Peck have been reduced as inflows continue to decline. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/22/11)

Reservoir	Yesterday kcfs	Forecast Today kcfs	7 days out 29 June kcfs	14 days out 06 July kcfs	Pre-2011 Record kcfs
Fort Peck	60.2	60	60	55	35
Garrison	150.4	150	150	150	65
Oahe	153.9	150	160	160	59
Big Bend	162.9	165	165	160	74
Fort Randall	139.6	138	157	157	67
Gavins Point	150.9	155	160	160	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/22/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.9	20.6	mid-Jun
Pierre, SD	13	19.7	18.7	mid-Jun
Sioux City, IA	30	34.2	35-37	mid-Jun thru July
Decatur, NE	35	39	40-42	mid-Jun thru July
Omaha, NE	29	34.7	34-36	mid-Jun thru July
Nebraska City, NE	18	27.8	27-28+	mid-Jun thru July
St. Joseph, MO	17	25.5	27-32	mid-Jun thru July
Kansas City, MO	32	26.5	30-39	mid-Jun thru July
Waverly, MO	20	24.9	27-31	mid-Jun thru July
Boonville, MO	21	22.1	27-33	mid-Jun thru July
Hermann, MO	21	21.7	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases reached the 150-kcfs level. Increasing releases from Oahe Reservoir to 160,000 cfs has slightly increased stages at Pierre. However, the stages at both cities are still below the constructed levee crests.

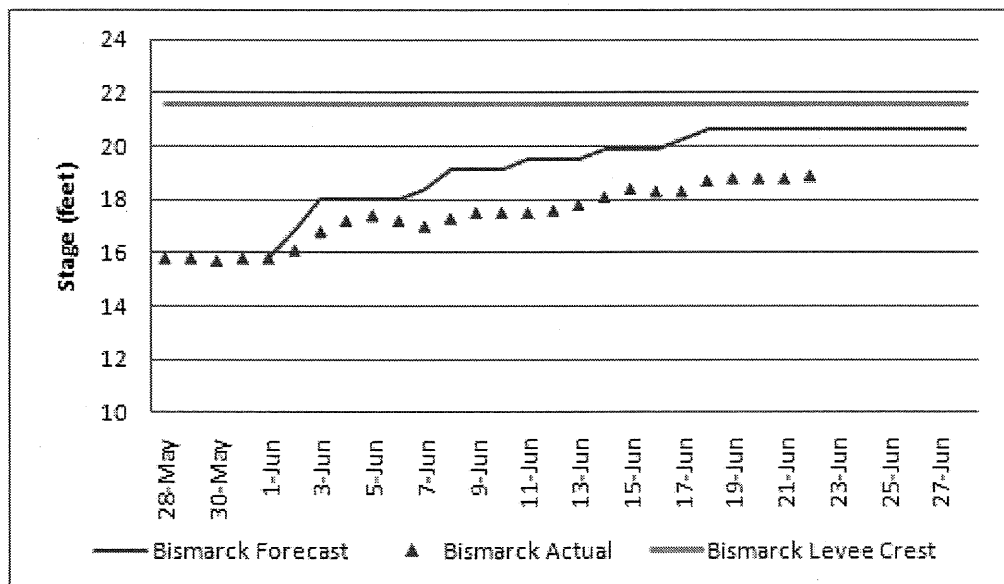


Figure 1. Missouri River stages at Bismarck, North Dakota.

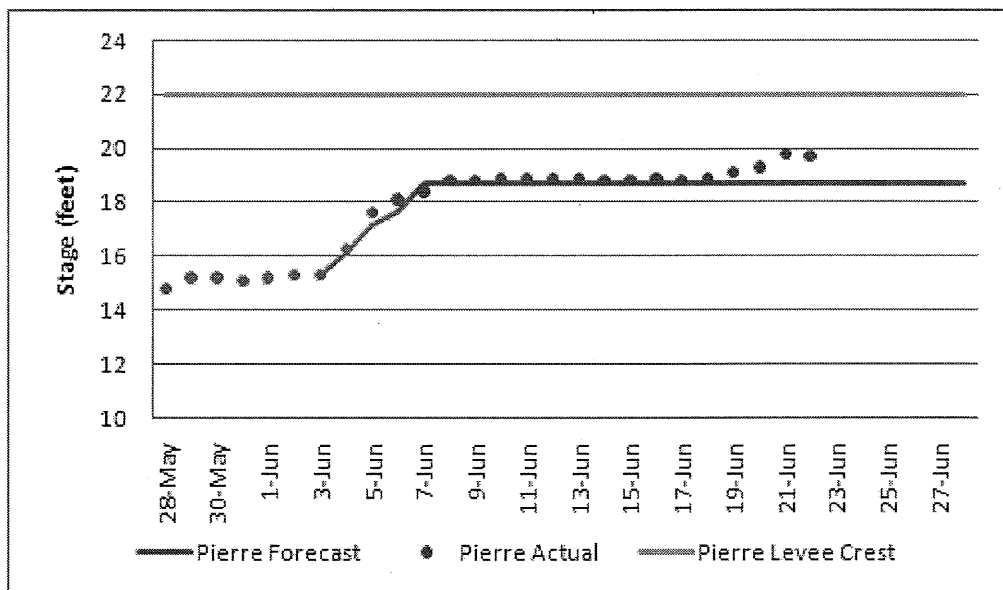


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast was prepared on June 20; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread moderate to heavy rain is forecasted for much of the Missouri River Basin. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 21 mountain snowpack updated by the Corps.

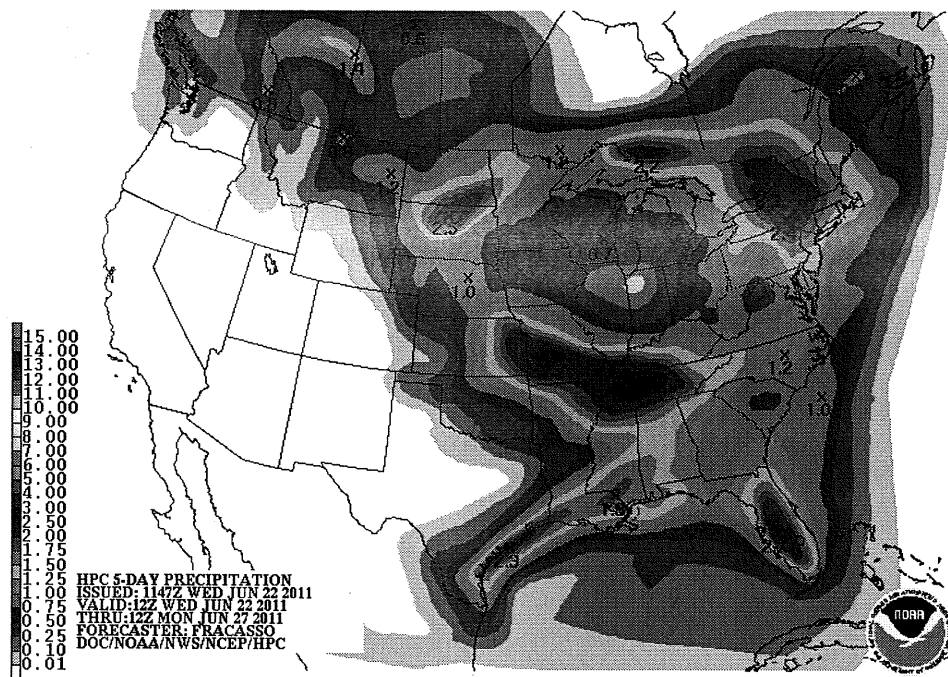


Figure 3. 5-day total QPF ending 0700 Monday, June 27, 2011.

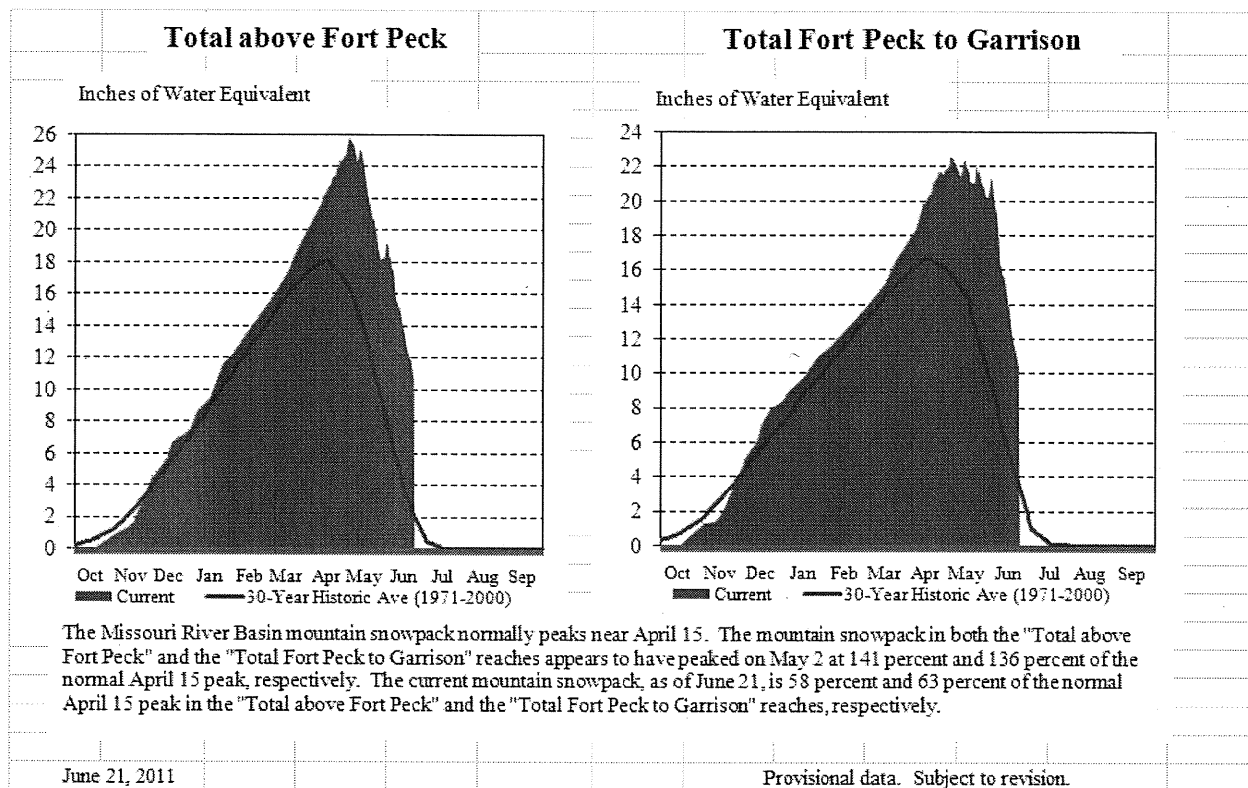


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 21, 2011.

Current Actions and Notable Information

Levee construction has been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

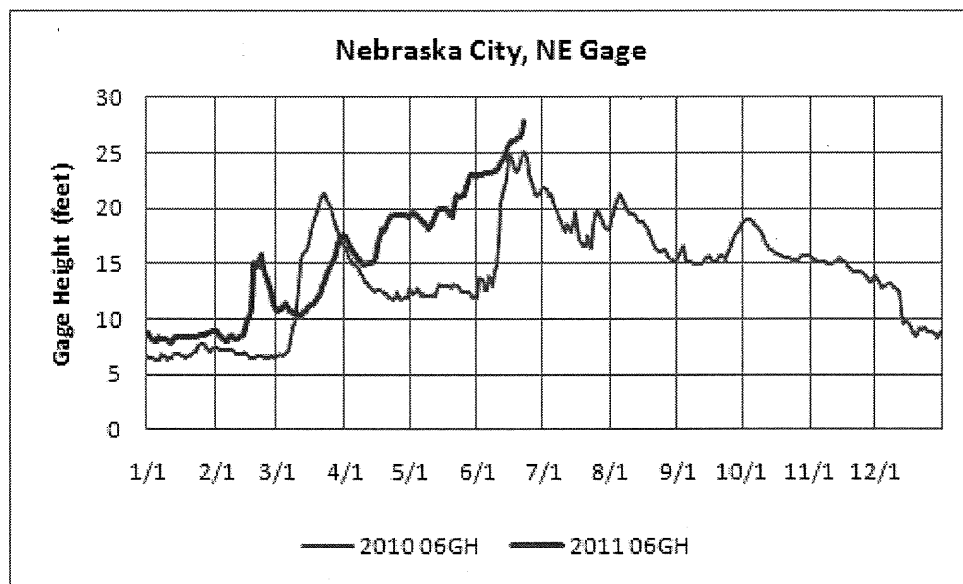


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

June 19, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

Additionally, levee R-548, located south of Brownville in Nemaha County, Nebraska overtopped on June 19.

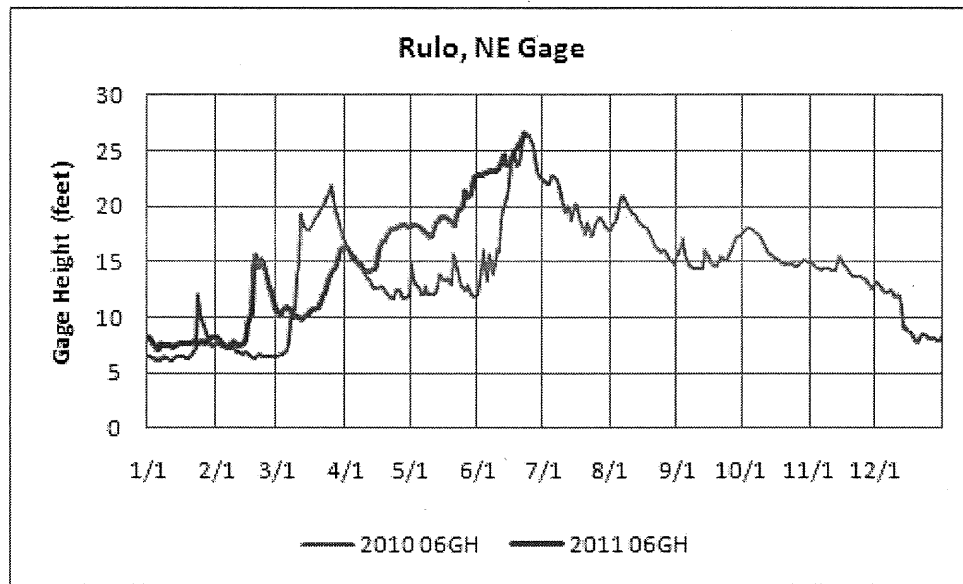


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Light to moderate rains fell over eastern Montana , North Dakota, South Dakota and Nebraska between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
Valid at 6/22/2011 1200 UTC- Created 6/22/11 15:41 UTC

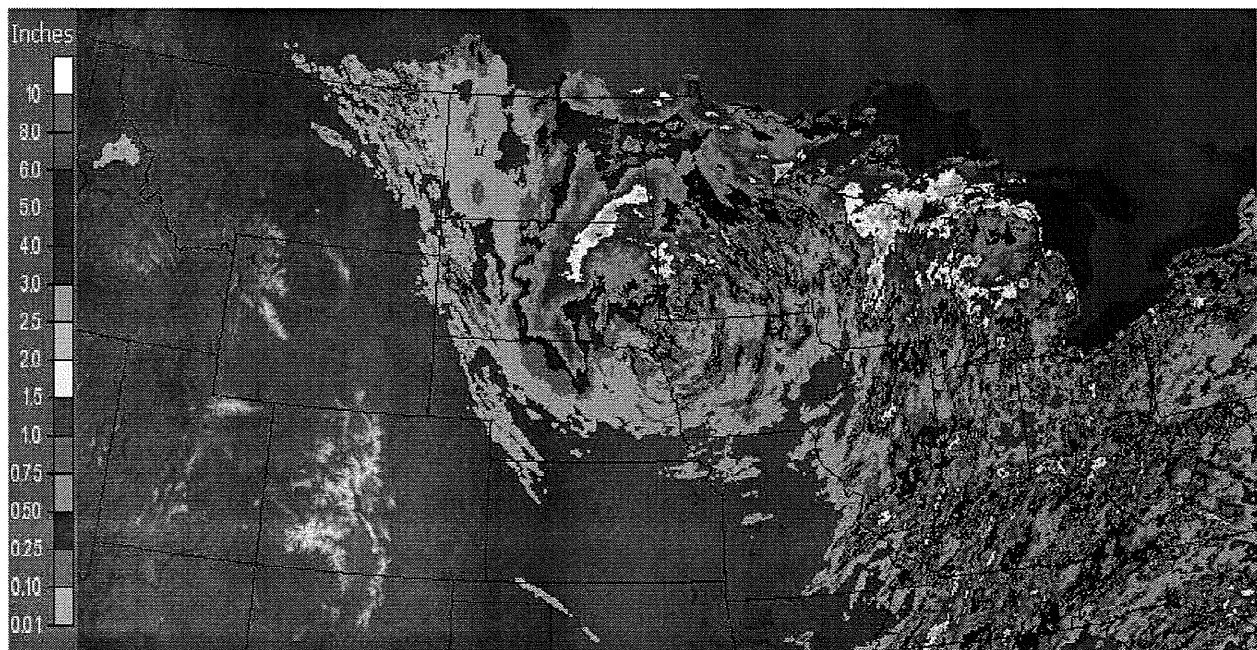


Figure 7. Rainfall on the Central Region of the United States for June 21, 2011.

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 10:56 AM
To: Farhat, Jody S NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWD02; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Cc: DLL-CENWO-OD-FP; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO
Subject: Spillway Gate Openings with Unit 3 offline (UNCLASSIFIED)
Attachments: Spillway Gates 6-22-11.pdf

██████████, P.E.
U.S. Army Corps of Engineers
Operations Project Manager
Fort Peck Project
Fort Peck, Montana 59223
PH: ██████████

Classification: UNCLASSIFIED
Caveats: NONE

Fort Peck Spillway

Gate	Ft In	CFS Out	CFS In	Ft Out
1	3.0	3089	0	0.0
2	3.0	3089	0	0.0
3	3.0	3089	0	0.0
4	3.0	3089	0	0.0
5	3.0	3089	0	0.0
6	3.0	3089	0	0.0
7	3.1	3188	0	0.0
8	3.1	3188	0	0.0
9	3.1	3188	0	0.0
10	3.1	3188	0	0.0
11	3.0	3089	0	0.0
12	3.0	3089	0	0.0
13	3.0	3089	0	0.0
14	3.0	3089	0	0.0
15	3.0	3089	0	0.0
16	3.0	3089	0	0.0

Current Spillway Discharge 49818

Spillway	Project
Current HR Avg. Discharge	47692 cfs
Previous HR Avg. Discharge	46704 cfs
Running Daily Avg. Discharge	46644 cfs
	57916 cfs
	59089 cfs
	59620 cfs

Main Menu

09:20AM Jun 22, 2011

NWO

From: Hofmann, Anthony J COL NWK
Sent: Wednesday, June 22, 2011 10:34 AM
To: Farhat, Jody S NWD02
Subject: Re: Missouri (UNCLASSIFIED)

Great Jody--thanks. I think the .7 MAF is what they are looking for.

Colonel Tony Hofmann, PMP
Commander, Kansas City District
U.S. Army Corps of Engineers
B.B. 816-807-0129

----- Original Message -----

From: Farhat, Jody S NWD02
To: Hofmann, Anthony J COL NWK
Sent: Wed Jun 22 08:27:57 2011
Subject: RE: Missouri (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

The combined storage capacity of the mainstem system is 73.1 MAF to the top of exclusive at all six dams. Today's storage is 72.4 MAF, but that number includes 0.6 MAF held in surcharge at Fort Peck and Garrison. So I would estimate the remaining storage, not including any surcharge at the other 4 projects to be $73.1 - (72.4 - 0.6) = 1.3$ MAF

Not sure if that answers the question.

The other way to look at this is that when we increased releases from Oahe and Big Bend last week we had about 1.0 MAF of storage capacity available in Fort Randall. Today that number is down to 0.7 MAF.

Let me know if you have any questions.

VR,
Jody

-----Original Message-----

From: Hofmann, Anthony J COL NWK
Sent: Wednesday, June 22, 2011 8:57 AM
To: Farhat, Jody S NWD02
Subject: Missouri

Jody-

I had a question from Missouri leadership after yesterday's decision on Gavin's releases. Question: we had approximately 1 million AF of storage in the system before the precip in last 72 hrs.

How much is left now?

Any help is appreciated.

Colonel Tony Hofmann, PMP

Commander, Kansas City District
U.S. Army Corps of Engineers
B.B. 816-807-0129

Classification: UNCLASSIFIED
Caveats: NONE

NWO

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 10:31 AM
To: CENWO-EOC NWO; Bertino, John J Jr NWO; [REDACTED] NWD; [REDACTED] NWO; 'bruce.sullivan@noaa.gov'; 'bruce.terry@noaa.gov'; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; DLL-CENWO-EOC CMT-ALL; [REDACTED] NWO; Farhat, Jody S NWD02; Farmer, Monique L NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Johnston, Paul T HQ@ NWO; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWK; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; 'michael.eckert@noaa.gov'; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; 'robert.kelly@noaa.gov'; Ruch, Robert J COL NWO; [REDACTED] NWO; [REDACTED] NWO; Tipton, Robert A Col NWD; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Williamson, Eileen L NWO; [REDACTED] NWD; Blechinger, Erik T NWO; [REDACTED] NWK; [REDACTED] RC; [REDACTED] SPK; [REDACTED] SWG; [REDACTED] NWO; Oldham, Margaret NWO; [REDACTED] SWL; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
Subject: Riverwatch Daily Update June 22, 2011 (UNCLASSIFIED)
Attachments: Flood_Fight_Storyboard_22JUN.docx

Classification: UNCLASSIFIED

Caveats: NONE

Missouri River Mainstem Reservoir Bulletin (Updated 22 Jun; 1000 CDT)

Fort Peck (In operation since 1940)

Midnight Elevation

- * 2251.8 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 47,000 cfs (21 Jun)
- * 50,000 cfs (20 Jun)

Daily Avg. Release

- * 60,200 cfs (21 Jun)
- * 61,800 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)

- * 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been decreased to 60,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.

Record Pool Elevation (Year)

- * 2251.6 msl (1975)

Record Flow (Year)
* 35,000 cfs (1975)

Projected Record Flow (Date)
* 65,000 cfs (Mid June)

Garrison (In operation since 1955)
Midnight Elevation
* 1854.3 ft msl
* 24-hr Change (+0.2 ft)

Daily Avg. Inflow
* 192,000 cfs (21 Jun)
* 188,000 cfs (20 Jun)

Daily Avg. Release
* 150,400 cfs (21 Jun)
* 150,200 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)
* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)
* 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)
* 1854 ft msl

River Stage (Bismarck)
* 18.89 (0715 CDT 22 Jun)
* Flood stage - 16 ft
* 18.85 (0815 CDT 21 Jun)

Planned Scheduled Releases (Subject to Change)
* Releases have been stepped up to 150,000 cfs.
* Reservoir is currently using surcharge storage above the exclusive flood control zone.
* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)
* 1854.8 msl (1975)

Record Flow (Year)
* 65,000 cfs (1975)

Projected Record Flow (Date)
* 150,000 cfs (Mid June)

Oahe (In operation since 1962)
Midnight Elevation
* 1619.3 ft msl
* 24-hr Change (+0.4 ft)

Daily Avg. Inflow
* 218,000 cfs (21 Jun)
* 201,000 cfs (20 Jun)

Daily Avg. Release

- * 153,900 cfs (21 Jun)
- * 160,300 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1617 ft msl - 1620 ft msl

Top of Spillway Gates (closed)

- * 1620 ft msl

River Stage (Pierre)

- * 19.71 (0731 CDT 22 Jun)
- * Flood stage - 15 ft
- * 19.81 (0730 CDT 21 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 160,000 cfs.
- * Reservoir is currently in the exclusive flood control zone.
- * Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1421.0 ft msl
- * 24-hr Change (+1.1 ft)

Daily Avg. Inflow

- * 195,000 cfs (21 Jun)
- * 172,000 cfs (20 Jun)

Daily Avg. Release

- * 162,900 cfs (21 Jun)
- * 158,900 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates (closed)

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 165,000 over the next 24 hours.
- * Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 165,000 cfs (Late June)

Fort Randall (In operation since 1953)

Midnight Elevation

* 1368.0 ft msl

* 24-hr Change (+1.7 ft)

Daily Avg. Inflow

* 213,000 cfs (21 Jun)

* 200,000 cfs (20 Jun)

Daily Avg. Release

* 139,600 cfs (21 Jun)

* 143,500 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates (closed)

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 157,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 157,000 cfs (Late June)

Gavins Point (In operation since 1955)

Midnight Elevation

* 1208.1 ft msl

* 24-hr Change (+0.7 ft)

Daily Avg. Inflow

* 159,000 cfs (21 Jun)

* 150,000 cfs (20 Jun)

Daily Avg. Release

* 150,900 cfs (21 Jun)

* 150,000 cfs (20 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates (closed)

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs over the next two days.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation

Source of information: <http://www.nwd-mr.usace.army.mil/rcc>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

24-hr forecast (Glasgow, MT)

Today: Isolated showers and t-storms after 3pm. Areas of fog before 9am, otherwise mostly sunny, high near 78. East southeast wind 5 to 8 mph. Chance of precipitation is 20%.

Tonight: Isolated showers and t-storms before 9pm. Partly cloudy, low around 57. East southeast wind 9 to 11 mph. Chance of precipitation is 20%.

Thursday: Mostly sunny, high near 82. East southeast wind 11 to 14 mph increasing to 19 to 22 mph. Winds could gust as high as 30 mph.

24-hr forecast (Williston, ND)

Today: Mostly sunny, high near 73. North wind 6 to 9 mph.

Tonight: Mostly clear, low around 53. North wind at 9 mph becoming east.

Thursday: Sunny, high near 75. Light wind becoming southeast 10 to 13 mph.

24-hr forecast (Riverdale, ND)

Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind around 17 mph, with gusts as high as 24 mph.

Tonight: 20% chance of showers before 1am. Partly cloudy, with a low around 52. North wind 11 to 14 mph becoming calm. Winds could gust as high as 20 mph.

Thursday: Sunny, high near 73. Calm wind becoming east 4 to 7 mph.

24-hr forecast (Washburn, ND)

Today: 20% chance of showers after 1pm. Partly sunny, high near 68. North wind 17 to 20 mph, with gusts as high as 28 mph.

Tonight: 20% chance of showers before 1am. Partly cloudy, low around 51. North wind 12 to 15 mph becoming calm. Winds could gust as high as 21 mph.

Thursday: Sunny, high near 73. North wind 3 and 7 mph.

24-hr forecast (Bismarck/Mandan, ND)

Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind 17 to 21 mph, with gusts as high as 29 mph.

Tonight: 20% chance of showers before 1am. Partly cloudy, low around 50. North wind 13 to 16 mph becoming light. Winds could gust as high as 23 mph.

Thursday: Sunny, high near 75. North wind 3 to 7 mph.

24-hr forecast (Pierre, SD)

Today: Mostly sunny, high near 72. North northwest wind 21 to 25 mph, with gusts as high as 34 mph.

Tonight: Mostly clear, low around 51. North northwest wind 17 to 20 mph decreasing to 6 to 9 mph.

Thursday: Sunny, high near 75. North northwest wind around 8 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Mostly sunny, high near 73. North northwest wind 21 to 25 mph, with gusts as high as 34 mph.

Tonight: Mostly clear, low around 51. North northwest wind 15 to 18 mph decreasing to 6 to 9 mph.

Thursday: Sunny, high near 75. North northwest wind around 8 mph.

24-hr forecast (Lower Brule, SD)

Today: Isolated showers before 1pm. Partly sunny, high near 71. North northwest wind 22 to 25 mph, with gusts as high as 36 mph. Chance of precipitation is 20%.

Tonight: Partly cloudy, low around 52. North northwest wind 8 to 17 mph.

Thursday: Sunny, high near 75. North northwest wind 8 to 10 mph.

24-hr forecast (Chamberlain, SD)

Today: Slight chance of showers before 1pm. Mostly cloudy, high near 72. North northwest wind 23 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 20%.

Tonight: Partly cloudy, low around 52. North northwest wind 8 to 16 mph.

Thursday: Sunny, high near 76. North northwest wind 8 to 10 mph.

24-hr forecast (Yankton, SD)

Today: Showers likely, mainly before 1pm. Cloudy, high near 69. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 inch possible.

Tonight: Cloudy, then gradually becoming partly cloudy, with low around 54. Northwest wind 11 to 18 mph, with gusts as high as 28 mph.

Thursday: Sunny, high near 75. Northwest wind 13 to 16 mph.

24-hr forecast (Sioux City, IA)

Today: Showers likely, mainly before 1pm. Cloudy, high near 67. Northwest wind around 23 mph, with gusts as high as 32 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 inch possible.

Tonight: Slight chance of showers before 1am. Cloudy, then gradually becoming partly cloudy, low around 55. Northwest wind 10 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 20%.

Thursday: Mostly sunny, high near 74. Northwest wind 13 to 17 mph, with gusts as high as 26 mph.

24-hr forecast (Omaha, NE)

Today: 30% chance of showers, mainly before 1pm. Cloudy, high near 70. Northwest wind 20 to 22 mph, with gusts as high as 31 mph. New rainfall amounts 0.1 inch possible.

Tonight: Mostly cloudy, gradually becoming clear, low around 58. Northwest wind 8 to 17 mph, with gusts as high as 26 mph.

Thursday: Sunny, high near 75. Northwest wind 11 to 15 mph, with gusts as high as 22 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Flooding (Logistics) (Updated 22 Jun; 1000 CDT)

Personnel Deployed

7 (Glasgow, MT)
1 (Garrison, ND)
4 (Bismarck, ND)
1 (Fort Yates, ND)
6 (Williston, ND)
5 (Pierre, SD)
1 (Kansas City, MO)
3 (Sioux City, IA)
1 (S. Sioux City, NE)
1 (Onawa, IA)
16 (Missouri River Survey - 7 teams)
1 (Lincoln, NE)
1 (Offutt, NE)
5 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4')
Issued: 74,270 LF
On Hand: 35,750 LF
Projected Outstanding Requirements: 35,000 LF

Sandbags

Issued: 14,637,000
On Hand: 6,923,500

Projected Outstanding Requirements: 6.5 M

Poly Rolls

Issued: 2,836 rolls

On Hand: 1,987 rolls

Projected Outstanding Requirements: 1,500 rolls

Pumps

Issued: 48 pumps

On Hand: 8 pumps (7 - serviceable)

On Hand: 2 - 8" diesel pumps available; 5 - PTO pumps "on hold" for emergency response

Projected Outstanding Requirements: 20 pumps

Slingbags

On Hand: 1,225 slingbags (2K lbs each)

Heavybags

On Hand: 6,420 heavybags (35x35x35 each)

Geotextile

On Hand: 4 rolls (16' x 500')

Additional Supplies due in:

1 PTO pump awaiting parts/repair

Source of information: CMT Brief (21 Jun 11)

Classification: UNCLASSIFIED

Caveats: NONE



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 22 Jun; 1000 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2251.8 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow 47,000 cfs (21 Jun) 50,000 cfs (20 Jun) Daily Avg. Release 60,200 cfs (21 Jun) 61,800 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been decreased to 60,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1854.3 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 192,000 cfs (21 Jun) 188,000 cfs (20 Jun) Daily Avg. Release 150,400 cfs (21 Jun) 150,200 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) 1854 ft msl River Stage (Bismarck) 18.89 (0715 CDT 22 Jun) - Flood stage – 16 ft 18.85 (0815 CDT 21 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1619.3 ft msl 24-hr Change (+0.4 ft) Daily Avg. Inflow 218,000 cfs (21 Jun) 201,000 cfs (20 Jun) Daily Avg. Release 153,900 cfs (21 Jun) 160,300 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) 1620 ft msl River Stage (Pierre) 19.71 (0731 CDT 22 Jun) - Flood stage – 15 ft 19.81 (0730 CDT 21 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 160,000 cfs. - Reservoir is currently in the exclusive flood control zone. - Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1421.0 ft msl 24-hr Change (+1.1 ft) Daily Avg. Inflow 195,000 cfs (21 Jun) 172,000 cfs (20 Jun) Daily Avg. Release 162,900 cfs (21 Jun) 158,900 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 165,000 over the next 24 hours. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 165,000 cfs (Late June)	Midnight Elevation 1368.0 ft msl 24-hr Change (+1.7 ft) Daily Avg. Inflow 213,000 cfs (21 Jun) 200,000 cfs (20 Jun) Daily Avg. Release 139,600 cfs (21 Jun) 143,500 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 157,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 157,000 cfs (Late June)	Midnight Elevation 1208.1 ft msl 24-hr Change (+0.7 ft) Daily Avg. Inflow 159,000 cfs (21 Jun) 150,000 cfs (20 Jun) Daily Avg. Release 150,900 cfs (21 Jun) 150,000 cfs (20 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs over the next two days. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Isolated showers and t-storms after 3pm. Areas of fog before 9am, otherwise mostly sunny, high near 78. East southeast wind 5 to 8 mph. Chance of precipitation is 20%. Tonight: Isolated showers and t-storms before 9pm. Partly cloudy, low around 57. East southeast wind 9 to 11 mph. Chance of precipitation is 20%. Thursday: Mostly sunny, high near 82. East southeast wind 11 to 14 mph increasing to 19 to 22 mph. Winds could gust as high as 30 mph. 24-hr forecast (Williston, ND) Today: Mostly sunny, high near 73. North wind 6 to 9 mph. Tonight: Mostly clear, low around 53. North wind at 9 mph becoming east. Thursday: Sunny, high near 75. Light wind becoming southeast 10 to 13 mph.	24-hr forecast (Riverdale, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind around 17 mph, with gusts as high as 24 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, with a low around 52. North wind 11 to 14 mph becoming calm. Winds could gust as high as 20 mph. Thursday: Sunny, high near 73. Calm wind becoming east 4 to 7 mph. 24-hr forecast (Washburn, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 68. North wind 17 to 20 mph, with gusts as high as 28 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, low around 51. North wind 12 to 15 mph becoming calm. Winds could gust as high as 21 mph. Thursday: Sunny, high near 73. North wind 3 and 7 mph.	24-hr forecast (Pierre, SD) Today: Mostly sunny, high near 72. North northwest wind 21 to 25 mph, with gusts as high as 34 mph. Tonight: Mostly clear, low around 51. North northwest wind 17 to 20 mph decreasing to 6 to 9 mph. Thursday: Sunny, high near 75. North northwest wind around 8 mph. 24-hr forecast (Ft. Pierre, SD) Today: Mostly sunny, high near 73. North northwest wind 21 to 25 mph, with gusts as high as 34 mph. Tonight: Mostly clear, low around 51. North northwest wind 15 to 18 mph decreasing to 6 to 9 mph. Thursday: Sunny, high near 75. North northwest wind around 8 mph.	24-hr forecast (Lower Brule, SD) Today: Isolated showers before 1pm. Partly sunny, high near 71. North northwest wind 22 to 25 mph, with gusts as high as 36 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 52. North northwest wind 8 to 17 mph. Thursday: Sunny, high near 75. North northwest wind 8 to 10 mph.	24-hr forecast (Chamberlain, SD) Today: Slight chance of showers before 1pm. Mostly cloudy, high near 72. North northwest wind 23 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 20%. Tonight: Partly cloudy, low around 52. North northwest wind 8 to 16 mph. Thursday: Sunny, high near 76. North northwest wind 8 to 10 mph.	24-hr forecast (Yankton, SD) Today: Showers likely, mainly before 1pm. Cloudy, high near 69. Northwest wind 22 to 25 mph, with gusts as high as 34 mph. Chance of precipitation is 60%. New rainfall amounts 0.1 inch possible. Tonight: Cloudy, then gradually becoming partly cloudy, with low around 54. Northwest wind 11 to 18 mph, with gusts as high as 28 mph. Thursday: Sunny, high near 75. Northwest wind 13 to 16 mph. 24-hr forecast (Sioux City, IA) Today: Showers likely, mainly before 1pm. Cloudy, high near 67. Northwest wind around 23 mph, with gusts as high as 32 mph. Chance of precipitation is 70%. New rainfall amounts 0.1 inch possible. Tonight: Slight chance of showers before 1am. Cloudy, then gradually becoming partly cloudy, low around 55. Northwest wind 10 to 18 mph, with gusts as high as 28 mph. Chance of precipitation is 20%. Thursday: Mostly sunny, high near 74. Northwest wind 13 to 17 mph, with gusts as high as 26 mph.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 22 Jun; 1000 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: 20% chance of showers after 1pm. Partly sunny, high near 70. North wind 17 to 21 mph, with gusts as high as 29 mph. Tonight: 20% chance of showers before 1am. Partly cloudy, low around 50. North wind 13 to 16 mph becoming light. Winds could gust as high as 23 mph. Thursday: Sunny, high near 75. North wind 3 to 7 mph.				24-hr forecast (Omaha, NE) Today: 30% chance of showers, mainly before 1pm. Cloudy, high near 70. Northwest wind 20 to 22 mph, with gusts as high as 31 mph. New rainfall amounts 0.1 inch possible. Tonight: Mostly cloudy, gradually becoming clear, low around 58. Northwest wind 8 to 17 mph, with gusts as high as 26 mph. Thursday: Sunny, high near 75. Northwest wind 11 to 15 mph, with gusts as high as 22 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>



Missouri River Flooding (Logistics) (Updated 22 Jun; 1000 CDT)

Personnel Deployed

7 (Glasgow, MT)	5 (Pierre, SD)	16 (Missouri River Survey – 7 teams)
1 (Garrison, ND)	1 (Kansas City, MO)	1 (Lincoln, NE)
4 (Bismarck, ND)	3 (Sioux City, IA)	1 (Offutt, NE)
1 (Fort Yates, ND)	1 (S. Sioux City, NE)	5 (Hamburg, IA)
6 (Williston, ND)	1 (Onawa, IA)	

Equipment Deployed

HESCO (3' and 4') Issued: 74,270 LF On Hand: 35,750 LF Projected Outstanding Requirements: 35,000 LF	Slingbags On Hand: 1,225 slingbags (2K lbs each)
Sandbags Issued: 14,637,000 On Hand: 6,923,500 Projected Outstanding Requirements: 6.5 M	Heavybags On Hand: 6,420 heavybags (35x35x35 each)
Poly Rolls Issued: 2,836 rolls On Hand: 1,987 rolls Projected Outstanding Requirements: 1,500 rolls	Geotextile On Hand: 4 rolls (16' x 500')
Pumps Issued: 48 pumps On Hand: 8 pumps (7 – serviceable) On Hand: 2 – 8" diesel pumps available; 5 – PTO pumps "on hold" for emergency response Projected Outstanding Requirements: 20 pumps	Additional Supplies due in: 1 PTO pump awaiting parts/repair

Source of information: CMT Brief (21 Jun 11)

NWO

From: [REDACTED] NWD02
Sent: Wednesday, June 22, 2011 9:45 AM
To: DLL-CENWD-PDR; [REDACTED] NWO
Subject: Wednesday Rain Report

>>>>>>> PAGESIZE 60

>>>>>>> DUMPPP24 * *

0**NOTE** DATA FOR THE PERIOD 06/22/2011-12Z THROUGH 06/22/2011-12Z WILL BE PROCESSED.

QUANTITY DESC (0.01)

OBSONLY

END

0PP24 DATA FOR 06/22/11-12Z THRU 06/22/11-12Z

0 - = MISSING VALUE OR SUM

E = ESTIMATED VALUE

P = PARTIAL SUM

STATION ID	DESCRIPTION	STATE	06/22	PERIOD SUM
OAKN8	OAKES	ND	3.25	3.26
WPTS2	WESTPORT	SD	3.12	3.13
ETH	WHEATON	MN	3.00	3.01
BCKN8	OAKES 6NNE, BEAR CR	ND	2.69E	2.70
WSTS2	WESTPORT 3SE	SD	2.69E	2.70
WMTS2	WILMOT 1ENE	SD	2.53	2.54
TWBS2	TWIN BROOKS 4W	SD	2.40	2.41
ERFS2	FREDERICK 9W, ELM R	SD	2.22	2.23
VTS2	VICTOR	SD	2.20E	2.21
VV	ORTONVILLE	MN	2.10E	2.11
FAR	FARGO	ND	1.96	1.97
SIWS2	SISSETON 4W	SD	1.94	1.95
ABES2	ABERDEEN 4NW	SD	1.90	1.90
KGIS2	ABERDEEN 5W	SD	1.90E	1.90
ELLN8	ELLENDALE 1N	ND	1.86E	1.87
ELLS2	FREDERICK 4SW	SD	1.85E	1.86
LOLS2	LEOLA 1E	SD	1.79E	1.79
PVRS2	PEEVER 8NNE	SD	1.79E	1.79
RICS2	ABERDEEN 9NW	SD	1.78E	1.78
AFCS2	ABERDEEN, FOOT CR	SD	1.78	1.78
SUES2	ABERDEEN 2S	SD	1.75E	1.75
SSTS2	SISSETON (AMRAD)	SD	1.75E	1.75
RDR	GRAND FORKS AFB	ND	1.73	1.74
CLKS2	CLEAR LAKE	SD	1.67	1.67
CLBS2	COLUMBIA 1W	SD	1.65	1.65
SSSS2	SISSETON	SD	1.65E	1.65
8D3	SISSETON	SD	1.65	1.65
CMBS2	COLUMBIA 1S, JAMES R	SD	1.61E	1.62
KSDS2	ABERDEEN 3SW	SD	1.53E	1.53
FRMN8	FORMAN 5SSE	ND	1.49	1.50
TWKN8	TEWAUKON RAWS	ND	1.49E	1.50
BJI	BEMIDJI AIRPORT	MN	1.47E	1.48
BCPS2	PEEVER 4S	SD	1.47	1.48
VERN8	VERONA	ND	1.47E	1.48
EMLS2	ELM LAKE 4NW	SD	1.46E	1.47
WETS2	WETONKA 7S	SD	1.44E	1.45
ORDS2	ORDWAY 1S, ELM R	SD	1.43E	1.43

SMTS2	SUMMIT	SD	1.43E	1.43
GRYS2	GARY 4S	SD	1.41E	1.41
HVNN8	HAVANA	ND	1.38	1.38
TVLS2	TUNERVILLE	SD	1.33E	1.34
PIR	PIERRE REGIONAL AP	SD	1.32	1.33
CBAS2	MUD LAKE OUTLET	SD	1.31	1.31
LLAS2	LEOLA	SD	1.27E	1.27
MSP	MINNEAPOLIS	MN	1.27	1.27
HOUS2	HOUGHTON 4SE	SD	1.23E	1.24
MVDM5	MONTEVIDEO	MN	1.23E	1.24
RRSS2	ROSCO	SD	1.23E	1.24

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1

- 03/20/07)

USER=MBRFC

DATE=Jun 22, 2011 - 14:02:22

0

0STATION

ID	DESCRIPTION	STATE	06/22	PERIOD SUM
ROSS2	ROSCOE	SD	1.23	1.24
FTPS2	FT PIERRE 3S, BAD R	SD	1.22E	1.23
BRTS2	BRITTON 9NW	SD	1.21E	1.22
PHMS2	PIERRE	SD	1.21E	1.22
VEBS2	VEBLEN 5SE	SD	1.21E	1.22
27D	CANBY	MN	1.19E	1.20
ABR	ABERDEEN AIRPORT	SD	1.18	1.18
LRBI4	LARRABEE	IA	1.18E	1.18
0182N8	GUELPH 1NW	ND	1.17E	1.17
SILS2	SISSETON 11SW	SD	1.16E	1.16
MLRS2	MILLER	SD	1.14E	1.14
MLLS2	MILLER	SD	1.14	1.14
PKRS2	PARKER, WEST FORK	SD	1.14	1.14
AXN	ALEXANDRIA	MN	1.13	1.13
MRRS2	MILLER	SD	1.12E	1.13
ROYS2	ROY LAKE ST PARK	SD	1.11E	1.12
MVNS2	MARVIN 9SW	SD	1.10E	1.11
HOES2	HOSMER 9E	SD	1.09E	1.10
MARS2	MARION	SD	1.09E	1.10
PIES2	OAHE DAM	SD	1.08E	1.09
VALN8	VALLEY CITY 3NNW	ND	1.08E	1.09
KDNS2	ABERDEEN 6SE	SD	1.06E	1.06
MIIS2	MILLER 7NW	SD	1.05E	1.05
FLOS2	FLORENCE, BIG SIOUX	SD	1.04E	1.04
MRES2	MILLER	SD	1.04E	1.04
STLS2	ST LAWRENCE	SD	1.04E	1.04
FFDS2	FREDERICK	SD	1.02E	1.02
TURS2	TURTON	SD	1.02	1.02
VBLS2	VEBLEN 3NW	SD	1.01E	1.01
BTHS2	BATH 1NE	SD	1.00E	1.00
PIRS2	PIERRE	SD	1.00E	1.00
JSLN8	LUDDEN 6SW, JAMES R	ND	0.98E	0.99
MINS2	MINA (MINA LAKE)	SD	0.98E	0.99
WINS2	WINNER	SD	0.98E	0.99
SFD	WINNER AIRPORT	SD	0.98E	0.99
ICR	WINNER AIRPORT	SD	0.98	0.99
ONIS2	ONIDA 7NE	SD	0.97	0.98
PKD	PARK RAPIDS AIRPORT	MN	0.97E	0.98
SRAW4	SARATOGA, N PLATTE R	WY	0.96	0.96
SLRS2	ST LAWRENCE	SD	0.96E	0.96

WBWS2	WATERTOWN (BROADWAY)	SD	0.96	0.96
SARW4	SARATOGA	WY	0.95E	0.95
WRNS2	WARNER	SD	0.95E	0.95
SOSS2	SOUTH SHORE 8W	SD	0.94	0.94
SFHW4	SARATOGA HATCHERY	WY	0.93E	0.94
WATS2	WATERTOWN	SD	0.93E	0.94
ATY	WATERTOWN AIRPORT	SD	0.93	0.94
LWRS2	WHITE RIVER 2N	SD	0.93	0.94
HYTS2	HAYTI	SD	0.92	0.93
WRVS2	WHITE RIVER	SD	0.92E	0.93
GFK	GRAND FORKS	ND	0.91	0.92
HDKM5	HENDRICKS	MN	0.91E	0.92
OKSN8	OAKES 6SE	ND	0.91E	0.92

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
 DATE=Jun 22, 2011 - 14:02:22

0
 0STATION

ID	DESCRIPTION	STATE	06/22	PERIOD SUM
WRTS2	WATERTOWN 1W	SD	0.91E	0.92
ATNS2	ASHTON, JAMES R	SD	0.89	0.89
BSWS2	WATERTOWN, BIG SIOUX	SD	0.88E	0.88
SREN8	STREETER 5NW	ND	0.87	0.88
STRN8	STREETER 5NW	ND	0.87E	0.88
RYLS2	LAKE CITY 3SW	SD	0.86E	0.87
HECS2	HECLA	SD	0.83E	0.83
RVLS2	RAUVILLE 2S	SD	0.83	0.83
ASHS2	ASHTON 2SW	SD	0.81E	0.81
CNGS2	CANNING 1W	SD	0.81E	0.81
GROS2	GROTON	SD	0.81E	0.81
WUDS2	WOOD	SD	0.81E	0.81
MAPS2	FREDERICK, MAPLE R	SD	0.80E	0.81
GGBS2	GETTYSBURG 10SW	SD	0.78E	0.78
MML	MARSHALL AIRPORT	MN	0.78E	0.78
GDNS2	GARDEN CITY	SD	0.77E	0.77
LBNM5	LAKE BENTON	MN	0.77	0.77
SFDS2	STRATFORD, JAMES R	SD	0.77E	0.77
WTTS2	WATERTOWN (AMRAD)	SD	0.77E	0.77
RFDS2	REDFIELD, JAMES R	SD	0.76	0.76
SPVN1	SPRINGVIEW	NE	0.76	0.76
DOLS2	DOLAND	SD	0.75	0.75
FORN8	FORBES 10NW	ND	0.75E	0.75
MRFS2	MADISON 2SE	SD	0.75	0.75
MCVN8	MCVILLE	ND	0.75E	0.75
OKES2	OKREEK 4SSW	SD	0.75E	0.75
RALS2	RAUVILLE 2W	SD	0.75E	0.75
RAUS2	RAUVILLE 2N, MUD CR	SD	0.74	0.75
RANS2	VEBLEN 5W	SD	0.74E	0.75
0929N8	STREETER 2W	ND	0.73E	0.74
WTRS2	WATERTOWN, BIG SIOUX	SD	0.73	0.74
CROS2	CROCKER 6SW	SD	0.72E	0.73
DOSS2	DOLAND	SD	0.72E	0.73
FLTN8	FULLERTON 1ESE	ND	0.72E	0.73
KAMS2	LAKE KAMPESKA	SD	0.72E	0.73
RAYS2	RAYMOND 3NE	SD	0.72E	0.73
RETS2	REE HEIGHTS 15S	SD	0.72	0.73
CPRS2	CARPENTER 4NNE	SD	0.71E	0.71

CLAS2	CLARK	SD	0.71	0.71
WBSS2	WATERTOWN, BIG SIOUX	SD	0.71	0.71
WRNM5	WORTHINGTON 2NNE	MN	0.71E	0.71
OTG	WORTHINGTON AIRPORT	MN	0.71	0.71
CNDS2	CONDE	SD	0.70E	0.70
DSMS2	DE SMET	SD	0.70E	0.70
HON	HURON	SD	0.70	0.70
KDRS2	KIDDER	SD	0.70E	0.70
MIRS2	MILLER 1NW	SD	0.70E	0.70
YTNS2	YANKTON 2E	SD	0.70	0.70
MSSS2	MISSION	SD	0.69	0.69
WSCS2	ONIDA 15NW	SD	0.69E	0.69
EVES2	ABERDEEN 2E	SD	0.68E	0.69
SRMS2	RAMONA	SD	0.68E	0.69
BDLS2	WAUBAY 3NE	SD	0.68E	0.69

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BDE	BAUDETTE AIRPORT	MN	0.67E	0.68
PONS2	ESTELLINE 7W	SD	0.67E	0.68
FPRS2	FORT PIERRE 17WSW	SD	0.67E	0.68
JAMN8	PIPESTEM RES	ND	0.67	0.68
RDFS2	REDFIELD	SD	0.67E	0.68
YANS2	YANKTON, MISSOURI R	SD	0.67E	0.68
BADS2	BADGER 4NE	SD	0.66E	0.67
BNTS2	BLUNT	SD	0.66E	0.67
OKRS2	OKREEK 4W	SD	0.66E	0.67
ECSN1	ERICSON 8WNW	NE	0.65	0.65
0190N8	FORBES 4NE	ND	0.65E	0.65
HOMS2	HOSMER 1E	SD	0.65E	0.65
ONAS2	ONIDA 25W	SD	0.65E	0.65
GRGS2	GREGORY	SD	0.64	0.64
3DE	REDFIELD	SD	0.64E	0.64
WORM5	WORTHINGTON	MN	0.64E	0.64
ARTS2	ARTAS	SD	0.63E	0.63
ARAS2	ARTAS 1S	SD	0.63	0.63
DCCS2	CENTRAL CITY	SD	0.63	0.63
MEDN8	MEDINA	ND	0.63E	0.63
RSBS2	ROSEBUD 6N	SD	0.63E	0.63
ASTS2	ASTORIA 4S	SD	0.62E	0.63
CARS2	CARTHAGE	SD	0.62	0.63
HFDN8	HANNAFORD	ND	0.62E	0.63
PAHS2	KEYAPAHA, KEYAPAHA R	SD	0.62E	0.63
ODAS2	ONIDA 4NW	SD	0.62E	0.63
PRKS2	PARKER, WEST FORK	SD	0.62E	0.63
TYLM5	TYLER	MN	0.62E	0.63
COUN8	COURTENAY 1NW	ND	0.61E	0.62
BEKS2	WINFRED 2S	SD	0.61	0.62
CDRS2	CEDAR BUTTE 1NE	SD	0.60E	0.61
HOWS2	HOWARD	SD	0.59E	0.59
SIBI4	SIBLEY 3NE	IA	0.59	0.59
0392N8	STREETER 5S	ND	0.59E	0.59
BRIS2	BRITTON	SD	0.58E	0.58
BRNS2	BRITTON	SD	0.58E	0.58

0787N8	BUCHANAN 2S	ND	0.58E	0.58
BLTS2	BLUNT 6E	SD	0.57E	0.57
LSKM5	CURRIE	MN	0.57E	0.57
GTNS2	GROTON	SD	0.57E	0.57
WPO	PILOT MOUND	MB	0.57	0.57
SBLI4	SIBLEY	IA	0.57E	0.57
KEYA001	SPRINGVIEW 17WNW	NE	0.57E	0.57
BLNS2	BLUNT 6E	SD	0.56E	0.56
DEAS2	DEADWOOD	SD	0.56E	0.56
MERS2	MILLER 15S	SD	0.56E	0.56
WARS2	WARNER 12W	SD	0.56E	0.56
ARLS2	ARLINGTON 1W	SD	0.55E	0.56
BLON1	BLOOMFIELD	NE	0.55	0.56
BRKS2	BROOKINGS, BIG SIOUX	SD	0.55	0.56
CSLS2	CASTLEWOOD	SD	0.55E	0.56
CSWS2	CASTLEWOOD, BIG SIOUX	SD	0.55	0.56
SEKS2	ELKTON	SD	0.54E	0.55

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RCA	ELLSWORTH AFB	SD	0.54 0.55
GCEN8	GRACE CITY, JAMES R	ND	0.54 0.55
HWS2	HOWARD 8SE	SD	0.54E 0.55
JTWN8	JAMESTOWN HOSPITAL	ND	0.54 0.55
JMSN8	JAMESTOWN, JAMES R	ND	0.54E 0.55
HTOS2	ASHTON 5E	SD	0.53E 0.53
IRQS2	IROQUOIS	SD	0.53E 0.53
JMS	JAMESTOWN AIRPORT	ND	0.53E 0.53
KZBS2	KRANZBURG	SD	0.53E 0.53
LKWM5	LAKE WILSON	MN	0.53E 0.53
RCTS2	RAPID CITY (AMRAD)	SD	0.53 0.53
BKX	BROOKINGS	SD	0.52E 0.52
DNSI4	DENISON	IA	0.52 0.52
0189N8	FULLERTON 1NE	ND	0.52E 0.52
HRNS2	HURON	SD	0.52E 0.52
LMRN8	LA MOURE	ND	0.52E 0.52
MURS2	MURDO	SD	0.52E 0.52
RAP	RAPID CITY	SD	0.52 0.52
IRIS2	RAPID CITY 6W	SD	0.52 0.52
SIOI4	SIOUX CITY, PERRY CR	IA	0.52 0.52
STES2	STEPHAN 10SE	SD	0.52E 0.52
CFTN1	CROFTON 8N	NE	0.51E 0.51
FPKS2	FRANKFORT	SD	0.51E 0.51
GPDN1	GAVINS PT DAM	NE	0.51E 0.51
KTHN8	KATHRYN	ND	0.51E 0.51
WEWS2	WEWELA 1N	SD	0.51 0.51
HSGS2	DEADWOOD	SD	0.50E 0.50
HSTI4	HOLSTEIN	IA	0.50 0.50
MBG	MOBRIDGE	SD	0.50 0.50
IDHC2	MT EVANS RES STATION	CO	0.50E 0.50
RADI4	RATHBUN DAM	IA	0.50 0.50
BGRS2	BADGER 2S	SD	0.49E 0.50
FMTN1	FREMONT	NE	0.49 0.50
MCHN8	MCHENRY 3W	ND	0.49E 0.50

Y26	MOBRIDGE 2NNW	SD	0.48E	0.48
BUDS2	ROSEBUD LAKE	SD	0.48E	0.48
Y68	TRACY	MN	0.48E	0.48
CPTS2	CAPUTA 1SW	SD	0.47E	0.47
LEAS2	LEAD	SD	0.47E	0.47
VOLS2	VOLGA	SD	0.47E	0.47
WNRS2	WAUBAY WILDLIFE REF	SD	0.47E	0.47
BUTN1	BUTTE	NE	0.46	0.47
CHES2	CHESTER 2N	SD	0.46E	0.47
ESTS2	ESTELLINE	SD	0.46E	0.47
GLVI4	GALVA	IA	0.46E	0.47
HCKS2	HITCHCOCK	SD	0.46E	0.47
PTRI4	PETERSON, LTL SIOUX R	IA	0.46	0.47
AGAS2	AGAR 3N	SD	0.45E	0.45
BYRI4	BOYER 4SE	IA	0.45E	0.45
GHOS2	GHOST HAWK LAKE	SD	0.45E	0.45
IONS2	IONA 2NE	SD	0.45E	0.45
OCHI4	OCHEYEDAN	IA	0.45	0.45
ECHS2	RAPID CITY 5W	SD	0.45	0.45

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ID	DESCRIPTION	STATE	06/22 SUM
UTIS2	UTICA	SD	0.45E 0.45
BFTS2	BRENTFORD	SD	0.44E 0.44
WBCS2	DEADWOOD 2NE	SD	0.44E 0.44
ELNN8	ELLEDALE 9NW	ND	0.44E 0.44
PAES2	PARMELEE 7SSW	SD	0.44E 0.44
PAMS2	PARMELEE 7SSW	SD	0.44 0.44
ANW	AINSWORTH	NE	0.43E 0.44
BRGS2	BRIDGEWATER	SD	0.43E 0.44
DVDN1	DAVID CITY	NE	0.43 0.44
FTRN8	FT RANSOM 4NNE	ND	0.43E 0.44
MUDS2	MURDO (AMRAD)	SD	0.43E 0.44
EKCS2	RAPID CITY, ELK CR	SD	0.43E 0.44
FRES2	FREEMAN	SD	0.42E 0.42
MARN8	MARION 3S	ND	0.42E 0.42
PROS2	PRESHO 7NW	SD	0.42E 0.42
RCWS2	RAPID CITY 4SW	SD	0.42E 0.42
UNR	RAPID CITY WFO	SD	0.42E 0.42
UNRS2	RAPID CITY WFO	SD	0.42E 0.42
HAWS2	RAPID CR BELOW DITCH	SD	0.42 0.42
ALTIA	ALTON, FLOYD R	IA	0.41E 0.41
EGNS2	EGAN	SD	0.41E 0.41
FLAS2	FLANDREAU	SD	0.41E 0.41
HRSIA	HARRIS	IA	0.41E 0.41
HEDS2	HERRIED	SD	0.41E 0.41
HOSIA	HOSPERS	IA	0.41E 0.41
IPSS2	IPSWICH	SD	0.41E 0.41
NORN1	NORDEN 6S	NE	0.41E 0.41
ORCIA	ORANGE CITY	IA	0.41 0.41
SHDIA	SHELDON	IA	0.41 0.41
SHLIA	SHELDON 1N, FLOYD R	IA	0.41E 0.41
SOUIA	SIOUX CITY 8N	IA	0.41E 0.41
TULS2	TULARE, TURTLE CR	SD	0.41E 0.41

CNTI4	CENTERVILLE	IA	0.40E	0.41
COOI4	COON RAPIDS	IA	0.40	0.41
ECLC2	ECHO LAKE	CO	0.40	0.41
FAXS2	FAIRFAX #2	SD	0.40E	0.41
GTYS2	GETTYSBURG 13W	SD	0.40E	0.41
HODS2	HOWARD 11WSW	SD	0.40E	0.41
IDGI4	IDA GROVE 5NW	IA	0.40E	0.41
LCKM8	LICK CREEK	MT	0.40	0.41
MLSS2	MILLER 11NW	SD	0.40E	0.41
SEWS2	RAPID CITY 7SE	SD	0.40	0.41
REMI4	REMSSEN	IA	0.40E	0.41
RMSI4	REMSSEN #2	IA	0.40	0.41
SPRS2	SPEARFISH (AMRAD)	SD	0.40	0.41
SFHS2	SPEARFISH CREEK	SD	0.40E	0.41
WITS2	WHITE LAKE	SD	0.40	0.41
WTES2	WHITE LAKE (SDSU)	SD	0.40E	0.41
BONS2	BONESTEEL	SD	0.39E	0.39
KMLS2	GROTON 7NW	SD	0.39E	0.39
DOGS2	HE DOG LAKE	SD	0.39E	0.39
HSCS2	HERMOSA 7N	SD	0.39E	0.39
PCHI4	HINTON 4W, PERRY CR	IA	0.39E	0.39

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ID	DESCRIPTION	STATE	06/22	PERIOD SUM
LNNI4	LINN GROVE	IA	0.39E	0.39
PCPS2	PLATTE 8SW, PLATTE C	SD	0.39E	0.39
SPES2	SPEARFISH	SD	0.39E	0.39
BWDS2	BOWDLE	SD	0.38E	0.38
BROS2	BROOKINGS 2NE	SD	0.38E	0.38
9V9	CHAMBERLAIN	SD	0.38	0.38
CKPI4	CHEROKEE	IA	0.38E	0.38
CHKI4	CHEROKEE, LTL SIOUX	IA	0.38E	0.38
ODEI4	ODEBOLT	IA	0.38E	0.38
RHTS2	REE HEIGHTS	SD	0.38E	0.38
REHS2	REE HEIGHTS	SD	0.38E	0.38
WWKN8	WARWICK	ND	0.38E	0.38
BOWS2	BOWDLE	SD	0.37E	0.38
SIXI4	SIOUX CENTER 2SE	IA	0.37E	0.38
SSCN1	SOUTH SIOUX CITY	NE	0.37E	0.38
UNDI4	UNDERWOOD	IA	0.37	0.38
BAYI4	BAYARD 6SE	IA	0.36E	0.37
BBDS2	BIG BEND DAM	SD	0.36E	0.37
CBRS2	CHAMBERLAIN 5S	SD	0.36E	0.37
GLHS2	GLENHAM	SD	0.36E	0.37
SXNI4	JAMES 4W	IA	0.36E	0.37
TAPN8	TAPPEN 3NW	ND	0.36E	0.37
OLF	WOLF POINT	MT	0.36	0.37
ILLS2	MILLER 15S	SD	0.35E	0.35
MTVS2	MT VERNON, FIRESTEEL	SD	0.35	0.35
ONKS2	ONAKA 2N	SD	0.35E	0.35
PRMS2	PARMELEE 6W	SD	0.35E	0.35
PIPM5	PIPESTONE	MN	0.35	0.35
RAVS2	RAPID CITY 11SW	SD	0.35E	0.35
HCGS2	RAPID CITY 8W	SD	0.35E	0.35

RKVI4	ROCK VALLEY, ROCK R	IA	0.35	0.35
ATHS2	ATHOL, SF SNAKE CR	SD	0.34E	0.34
BTLI4	BATTLE CREEK 3NE	IA	0.34E	0.34
BRLN1	BURWELL, CALAMUS R	NE	0.34E	0.34
EDNS2	EDEN 6NW	SD	0.34E	0.34
EDMN8	EDMUNDS ARROWWOOD	ND	0.34E	0.34
ERKS2	EUREKA	SD	0.34E	0.34
MTRS2	MONTROSE 8N	SD	0.34E	0.34
SXRI4	SIOUX RAPIDS 4E	IA	0.34E	0.34
BHK	BAKER	MT	0.33	0.34
BRCS2	BRUCE, BIG SIOUX R	SD	0.33	0.34
CINI4	CARROLL	IA	0.33	0.34
DVL	DEVILS LAKE AIRPORT	ND	0.33	0.34
JMEI4	JAMES 1NE, FLOYD R	IA	0.33E	0.34
MIES2	MILLER 10S	SD	0.33E	0.34
MHLS2	MITCHELL	SD	0.33	0.34
ROBS2	ROUBAIX, ELK CREEK	SD	0.33	0.34
SPKN1	SPARKS, NIOBRARA R	NE	0.33E	0.34
WHTI4	WASHTA	IA	0.33E	0.34
BAKM8	BAKER	MT	0.32E	0.32
FARS2	FARMINGDALE, RAPID C	SD	0.32E	0.32
0388N8	GACKLE 11S	ND	0.32E	0.32
GLNS2	GALENA, BEAR BUTTE C	SD	0.32E	0.32

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HRLI4	HARLAN 1N	IA	0.32E	0.32
HARI4	HARTLEY	IA	0.32E	0.32
LAWI4	LAWTON	IA	0.32E	0.32
MCLS2	MITCHELL	SD	0.32E	0.32
NEOI4	NEOLA	IA	0.32E	0.32
PULI4	PAULLINA	IA	0.32E	0.32
SLBI4	STORM LAKE 2E	IA	0.32E	0.32
YNNs2	YANKTON, JAMES R	SD	0.32E	0.32
CYNS2	CANYON LAKE ABOVE	SD	0.31E	0.31
CCKS2	FORT THOMPSON 3E	SD	0.31E	0.31
GTHI4	GUTHRIE CENTER	IA	0.31E	0.31
LORI4	LORIMOR	IA	0.31	0.31
MELS2	MELLETTTE 4W	SD	0.31E	0.31
MSNS2	MISSION 14S	SD	0.31E	0.31
KTFM8	MIZPAH 12NE	MT	0.31	0.31
PANI4	PANORA	IA	0.31E	0.31
PRMI4	PROMISE CITY 6NW	IA	0.31E	0.31
RWF	REDWOOD FALLS	MN	0.31	0.31
LVSS2	SALEM 5NE	SD	0.31	0.31
WHTS2	WHITE	SD	0.31E	0.31
WLBNI	WILBER, TURKEY CR	NE	0.31	0.31
WDWN8	WOODWORTH 3E	ND	0.31E	0.31
BTNW4	BEAR TRAP MEADOW	WY	0.30	0.31
CLVM8	CALVERT CREEK	MT	0.30	0.31
CMBM8	COMBINATION	MT	0.30	0.31
GALS2	GALENA	SD	0.30E	0.31
HTYI4	HARTLEY	IA	0.30E	0.31
HRFS2	HEREFORD 12SW	SD	0.30E	0.31

HORS2	HURON	SD	0.30E	0.31
IRES2	IRENE	SD	0.30E	0.31
KMBS2	KIMBALL 11SSE	SD	0.30E	0.31
LEBI4	LEBANON 4SE	IA	0.30E	0.31
LMHM8	LEMHI RIDGE	MT	0.30	0.31
MLTS2	MELLETTE 7NE	SD	0.30E	0.31
NFLW4	NEW FORK LAKE	WY	0.30	0.31
OMA	OMAHA EPPLEY FIELD	NE	0.30	0.31
ANDW4	SOUTH PASS CITY 8WSW	WY	0.30E	0.31
TPEM8	TEPEE CREEK	MT	0.30	0.31
WRMM8	WARM SPRINGS	MT	0.30	0.31
WTRI4	WINTERSET 2NNW	IA	0.30	0.31
ZELS2	ZELL, MEDICINE CR	SD	0.30E	0.31
ANTI4	ANTHON 3E	IA	0.29E	0.29
HRHS2	HURON (AMRAD)	SD	0.29E	0.29
ISMM8	ISMAY	MT	0.29E	0.29
KSLN8	KENSAL 8NNW, JAMES R	ND	0.29E	0.29
MAYI4	MAY CITY	IA	0.29E	0.29
MYCI4	MAY CITY	IA	0.29E	0.29
PLKS2	PLANKINTON	SD	0.29E	0.29
RESS2	REE HEIGHTS, WOLF CR	SD	0.29E	0.29
RKRI4	ROCK RAPIDS	IA	0.29E	0.29
SBYS2	SELBY	SD	0.29E	0.29
ARWN8	ARROWWOOD LAKE	ND	0.28E	0.28
DAWN8	DAWSON	ND	0.28E	0.28

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HERM5	HERON LAKE	MN	0.28E	0.28
HLYI4	HOLLY SPRINGS 1NW	IA	0.28	0.28
KBLS2	KIMBALL	SD	0.28E	0.28
KIMS2	KIMBALL (AMRAD)	SD	0.28E	0.28
PGHI4	PRIMGHAR	IA	0.28E	0.28
RLYS2	ROSLYN	SD	0.28E	0.28
SNBI4	SANBORN	IA	0.28E	0.28
SCHN1	SCHUYLER	NE	0.28	0.28
SPNN1	SPRINGFIELD 7E	NE	0.28	0.28
AUDI4	AUDUBON	IA	0.27E	0.28
BETS2	BETHLEHEM CAVE	SD	0.27E	0.28
BWLN1	BURWELL	NE	0.27E	0.28
CRII4	CORRECTIONVILLE 1SW	IA	0.27E	0.28
FTMS2	FORT MEADE	SD	0.27E	0.28
GRGI4	GEORGE	IA	0.27E	0.28
GTTS2	GETTYSBURG	SD	0.27E	0.28
GFDN8	GLENFIELD	ND	0.27E	0.28
GRYI4	GRAY	IA	0.27E	0.28
OSAS2	HERMOSA, BATTLE CR	SD	0.27	0.28
HERS2	HERMOSA, BATTLE CR	SD	0.27	0.28
JSDS2	JOHNSON SIDING	SD	0.27E	0.28
LTHN8	LITCHVILLE 2NW	ND	0.27E	0.28
MITI4	MITCHELL 2N	SD	0.27E	0.28
ENES2	MITCHELL, ENEMY CR	SD	0.27E	0.28
JHNS2	RAPID CITY 11W	SD	0.27	0.28
LSSI4	SPENCER, LTL SIOUX R	IA	0.27	0.28

BTLN1	BARTLETT 1S	NE	0.26E	0.26
ROCK002	BASSETT 14SE	NE	0.26E	0.26
BLDS2	BROADLAND 5NE	SD	0.26E	0.26
BTPS2	BUFFALO TRADING POST	SD	0.26E	0.26
EVYI4	EVERLY 3WNW	IA	0.26E	0.26
GILI4	GILLETTE GROVE	IA	0.26E	0.26
LOWS2	LOWRY	SD	0.26E	0.26
MNOS2	MENNO	SD	0.26E	0.26
MIFI4	MILFORD, LTL SIOUX R	IA	0.26E	0.26
NBDN1	NORTH BEND, PLATTE R	NE	0.26E	0.26
STPS2	STEPHAN 2NW	SD	0.26E	0.26
VTNN1	VALENTINE 4SSE	NE	0.26E	0.26
WLFM8	WOLF POINT	MT	0.26E	0.26
YTNN1	YUTAN	NE	0.26E	0.26
ASWN1	AINSWORTH	NE	0.25E	0.25
HGEN8	HAGUE	ND	0.25E	0.25
LVNN1	LINCOLN, STEVENS CR	NE	0.25	0.25
NRKN8	NEW ROCKFORD	ND	0.25E	0.25
OACS2	OACOMA 9SW, WHITE R	SD	0.25	0.25
CHRS2	REDSHIRT, CHEYENNE R	SD	0.25	0.25
SACI4	SAC CITY	IA	0.25	0.25
STKS2	STICKNEY	SD	0.25E	0.25
VTN	VALENTINE	NE	0.25	0.25
ADAI4	ADAIR 2NNW	IA	0.24E	0.24
LKPI4	LAKE PARK	IA	0.24E	0.24
MONN8	MONTPELIER	ND	0.24E	0.24
MNDS2	MOUND CITY	SD	0.24E	0.24

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STATION	ID	DESCRIPTION	STATE	06/22	PERIOD SUM
PTTS2	PLATTE (AMRAD)	SD	0.24E	0.24	
ERVW4	RIVERSIDE	WY	0.24E	0.24	
SCNS2	SCENIC, CHEYENNE R	SD	0.24	0.24	
TOLS2	TOLSTOY 6N	SD	0.24E	0.24	
CHER007	VALENTINE 10WNW	NE	0.24E	0.24	
SQFM8	WISDOM 12NNE	MT	0.24E	0.24	
BSTN1	BASSETT	NE	0.23E	0.23	
SCCS2	CHESTER, SKUNK CR	SD	0.23E	0.23	
LLKS2	EUREKA 13NE RAWS	SD	0.23E	0.23	
GDV	GLENDIVE	MT	0.23	0.23	
HURS2	HURON, JAMES R	SD	0.23	0.23	
LKFM5	LAKEFIELD	MN	0.23	0.23	
MLDM8	MILDRED 5N	MT	0.23E	0.23	
MFRI4	MILFORD 4NW	IA	0.23E	0.23	
MOLI4	MOULTON, CHARITON R	IA	0.23E	0.23	
PLTS2	PLATTE	SD	0.23E	0.23	
RACS2	RAPID CITY 4NW	SD	0.23	0.23	
RCYS2	RAPID CITY, RAPID CR	SD	0.23	0.23	
RAPI4	ROCK RAPIDS, ROCK R	IA	0.23E	0.23	
TAYN1	TAYLOR	NE	0.23E	0.23	
TYLN1	TAYLOR	NE	0.23E	0.23	
0423N8	VENTURA 4NW	ND	0.23E	0.23	
VTLS2	VETAL, LTL WHITE R	SD	0.23E	0.23	
WHKN8	WISHEK	ND	0.23E	0.23	

ALBI4	ALBIA 3NNE	IA	0.22E	0.22
AVCM5	AVOCA	MN	0.22E	0.22
CHLI4	CLIMBING HILL	IA	0.22E	0.22
COYI4	CORYDON 2NE	IA	0.22E	0.22
DOOI4	DOON 4ENE	IA	0.22E	0.22
ESTI4	ESTHERVILLE 2N	IA	0.22	0.22
HGSC2	HAGERMAN TUNNEL	CO	0.22E	0.22
JKSN1	JACKSON	NE	0.22E	0.22
FRBS2	KEYSTONE 18SE	SD	0.22E	0.22
LGNI4	LOGAN #2, BOYER R	IA	0.22E	0.22
MAKM8	MAC KENZIE	MT	0.22E	0.22
MIDS2	MIDLAND, BAD R	SD	0.22	0.22
MIZM8	MIZPAH 4NNW	MT	0.22E	0.22
FSNN1	OMAHA AIRPORT	NE	0.22E	0.22
PHIM8	PHILIPSBURG 2S	MT	0.22E	0.22
PHGM8	PHILIPSBURG RAWS	MT	0.22E	0.22
PLEM8	PLEVNA	MT	0.22E	0.22
POLS2	POLLOCK	SD	0.22E	0.22
RHVI4	RUTHVIN	IA	0.22E	0.22
SHRM5	SHERBURN 3WSW	MN	0.22E	0.22
WAKS2	WAKPALA	SD	0.22E	0.22
WYNN1	WAYNE	NE	0.22	0.22
YWG	WINNEPEG	MB	0.22	0.22
WISN8	WISHEK 6W	ND	0.22E	0.22
ECKS2	ABERDEEN 2NE	SD	0.21E	0.21
ACYS2	ACADEMY 2NE	SD	0.21E	0.21
PIPS2	BELVIDERE 6SE	SD	0.21	0.21
BGSM8	BIG SKY 2WNW	MT	0.21E	0.21
BTWS2	BRENTWOOD COLONY	SD	0.21E	0.21

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STATION				PERIOD
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GARF005	BURWELL 20NE	NE	0.21E	0.21
CHLS2	CHELSEA	SD	0.21E	0.21
CODN1	CODY	NE	0.21E	0.21
CSTI4	CRESCENT	IA	0.21E	0.21
BAGM8	DUPUYER 22SW	MT	0.21E	0.21
LKSS2	FORT THOMPSON	SD	0.21E	0.21
GRNI4	GREENFIELD	IA	0.21E	0.21
KENS2	KENNEBEC	SD	0.21E	0.21
0429N8	LEHR 4S	ND	0.21E	0.21
LESN1	LESHARA, PLATTE R	NE	0.21E	0.21
NRDN8	NEW ROCKFORD, JAMES R	ND	0.21E	0.21
ROCK004	NEWPORT 11S	NE	0.21E	0.21
OSEI4	OSCEOLA	IA	0.21	0.21
SLMS2	SALEM 5NE	SD	0.21	0.21
WBNI4	WOODBINE	IA	0.21E	0.21
ADRM5	ADRIAN	MN	0.20E	0.20
ABRM8	ALBRO LAKE	MT	0.20	0.20
BADM8	BADGER PASS	MT	0.20	0.20
BLDW4	BALD MOUNTAIN	WY	0.20	0.20
BRLM8	BARKER LAKES	MT	0.20	0.20
BLKM8	BLACK PINE	MT	0.20	0.20
BLKI4	BLOCKTON 1W	IA	0.20	0.20

BNRS2	BOXELDER CREEK	SD	0.20	0.20
BRRM8	BRENNER RAWS	MT	0.20E	0.20
BNSI4	BRONSON	IA	0.20E	0.20
BKLW4	BROOKLYN LAKE	WY	0.20	0.20
2WX	BUFFALO	SD	0.20	0.20
BUFS2	BUFFALO	SD	0.20E	0.20
BFFS2	BUFFALO	SD	0.20E	0.20
CMDM8	CLOVER MEADOW	MT	0.20	0.20
COSW4	COLD SPRINGS	WY	0.20	0.20
CRYM8	CRYSTAL LAKE	MT	0.20	0.20
CCCS2	CUSTER CROSSING CAMP	SD	0.20E	0.20
DIVM8	DIVIDE	MT	0.20	0.20
DMLW4	DOMELAKE	WY	0.20	0.20
EST	ESTHERVILLE	IA	0.20	0.20
GRCW4	GRANITE CREEK	WY	0.20	0.20
GZPC2	GRIZZLY PEAK	CO	0.20	0.20
HBBW4	HOBBS PARK	WY	0.20	0.20
HOMN1	HOMER 3NE	NE	0.20E	0.20
JCKM5	JACKSON	MN	0.20E	0.20
LKIC2	LAKE IRENE	CO	0.20	0.20
BUSS2	LEAD 11SSW	SD	0.20E	0.20
BSKM8	LONE MOUNTAIN	MT	0.20	0.20
MRQW4	MARQUETTE CREEK	WY	0.20	0.20
MONS2	MONTROSE	SD	0.20E	0.20
MOVI4	MOVILLE	IA	0.20E	0.20
NSSC2	NAST LAKE	CO	0.20	0.20
NCKN1	NICKERSON 3NE	NE	0.20E	0.20
ODX	ORD	NE	0.20	0.20
ORDN1	ORD, NORTH LOUP R	NE	0.20E	0.20
VRPS2	PARKER, EAST FORK	SD	0.20	0.20
PLCM8	PLACER BASIN	MT	0.20	0.20

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NRPS2	ROCHFORD 7NW	SD	0.20	0.20
SPSW4	SOUTH PASS	WY	0.20	0.20
ULYN1	ULYSSES	NE	0.20E	0.20
WKPS2	WAKPALA	SD	0.20E	0.20
WSKM8	WHISKEY CREEK	MT	0.20	0.20
APKI4	ARNOLDS PARK	IA	0.19E	0.19
BSTM8	BIG SKY RESORT	MT	0.19E	0.19
CBCN1	CENTER, BAZILE CR	NE	0.19E	0.19
GVYS2	GANN VALLEY 8SW	SD	0.19E	0.19
HITI4	HONEY CREEK 1SE	IA	0.19	0.19
HOYM8	HOYT 3SW	MT	0.19E	0.19
IRWI4	IRWIN 3ESE	IA	0.19E	0.19
NWPN1	NEWPORT	NE	0.19E	0.19
NKRN1	NICKERSON, MAPLE CR	NE	0.19E	0.19
PGEN8	PINGREE, PIPESTEM CR	ND	0.19E	0.19
RWC14	ROCKWELL CITY #2	IA	0.19E	0.19
SPW	SPENCER	IA	0.19	0.19
SPCN1	SPENCER, NIOBRARA R	NE	0.19E	0.19
SPFN1	SPRINGFIELD	NE	0.19E	0.19
WTON1	WATERLOO	NE	0.19E	0.19

ATKN1	ATKINSON 3SW	NE	0.18E	0.19
WHEE001	BARTLETT 9NW	NE	0.18E	0.19
BNTN1	BENNINGTON 3WSW	NE	0.18	0.19
CRNN8	CARRINGTON 4N	ND	0.18E	0.19
CMBI4	COLUMBIA	IA	0.18E	0.19
DROS2	DEADWOOD 15SSE	SD	0.18E	0.19
DERI4	DERBY	IA	0.18E	0.19
DIKI4	DICKENS	IA	0.18E	0.19
EMMI4	EMMETSBURG	IA	0.18E	0.19
ENPW4	ENCAMPMENT	WY	0.18E	0.19
LGVS2	LONGVALLEY	SD	0.18E	0.19
PCMI4	MERRILL 6SW	IA	0.18E	0.19
OKAS2	OKATON	SD	0.18E	0.19
PRGN1	PRAGUE	NE	0.18E	0.19
RELS2	RELIANCE 4NE	SD	0.18E	0.19
SUX	SIOUX CITY	IA	0.18	0.19
3SE	SPENCER 1N	IA	0.18E	0.19
SPWI4	SPENCER, LTL SIOUX R	IA	0.18E	0.19
SBFS2	STURGIS 20NE	SD	0.18E	0.19
WAYN1	WAYNE 4NW	NE	0.18E	0.19
WHEE002	BARTLETT 9NE	NE	0.17E	0.17
CYKW4	BIG HORN, CONEY CR	WY	0.17E	0.17
GSWM8	BIG SKY 3S	MT	0.17E	0.17
EBMM8	BOULDER MINE SNOTEL	MT	0.17E	0.17
CAVS2	CAVOUR 10S	SD	0.17E	0.17
CREN1	CREIGHTON	NE	0.17E	0.17
ERLI4	EARLING	IA	0.17E	0.17
FOSI4	FOSTORIA	IA	0.17E	0.17
GRTN1	GRETNA 3ESE	NE	0.17E	0.17
GRAN1	GRETNA 4NE	NE	0.17	0.17
GRVW4	GROS VENTRE SUMMIT	WY	0.17E	0.17
HOON1	HOOPER	NE	0.17E	0.17
PINS2	INTERIOR 15SW RAWS	SD	0.17E	0.17

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KIGN1	KILGORE 1NE	NE	0.17E
LEMI4	LE MARS	IA	0.17E
MAHS2	MAHTO	SD	0.17E
MSNI4	MASSENA	IA	0.17
NMOS2	NEMO 1SW	SD	0.17E
OAKI4	OAKLAND	IA	0.17E
OMHN1	OMAHA, MISSOURI R	NE	0.17E
RLIS2	RELIANCE (AMRAD)	SD	0.17E
ROCS2	ROCHFORD 2WNW	SD	0.17E
SCES2	SCENIC 9NE	SD	0.17E
SRBN1	SCRIBNER, PEBBLE CR	NE	0.17E
SELS2	SELBY	SD	0.17E
SHYN8	SHEYENNE	ND	0.17E
SPOI4	SPENCER, OCHEYEDAN R	IA	0.17
STJN1	ST JAMES	NE	0.17E
WPRC2	WILLOW PARK	CO	0.17E
BRHN1	BRAINARD	NE	0.16E
SWNN1	CHAMBERS 18W	NE	0.16E

CHTI4	CHARITON 5SSE	IA	0.16E	0.16
CRTI4	CRESTON 2SW	IA	0.16E	0.16
ENCW4	ENCAMPMENT 10ESE	WY	0.16E	0.16
ETHS2	ETHAN	SD	0.16E	0.16
EXII4	EXIRA	IA	0.16E	0.16
GAVS2	GANN VALLEY 9NW	SD	0.16E	0.16
HRDM5	HARDWICK	MN	0.16E	0.16
HLDS2	HARROLD 12SSW	SD	0.16E	0.16
IDPC2	INDEPENDENCE PASS	CO	0.16E	0.16
LUVW5	LUVERNE, ROCK R	MN	0.16E	0.16
NFCW4	NORTH FRENCH CREEK	WY	0.16E	0.16
PNYM8	PONY	MT	0.16E	0.16
SSKW4	RIVERSIDE, SPRING CR	WY	0.16E	0.16
RYLI4	ROYAL	IA	0.16E	0.16
SCRN1	SCRIBNER	NE	0.16E	0.16
SLVM8	SILVER LAKE	MT	0.16E	0.16
SXGI4	SIOUX CITY	IA	0.16	0.16
TERM8	TERRY 1E	MT	0.16E	0.16
WPKS2	WHITETAIL PEAK RAW	SD	0.16	0.16
ALXS2	ALEXANDRIA	SD	0.15E	0.16
ALNN1	ALLEN	NE	0.15E	0.16
ALYN8	ASHLEY	ND	0.15E	0.16
COLS2	COLTON	SD	0.15E	0.16
OLU	COLUMBUS	NE	0.15E	0.16
CRFN1	CROFTON	NE	0.15E	0.16
DNWW4	DINWOODY	WY	0.15E	0.16
GNDM8	GLEN DIVE	MT	0.15E	0.16
GLNM8	GLEN DIVE, YELLOWSTONE	MT	0.15	0.16
LNCS2	LANGFORD	SD	0.15E	0.16
LENI4	LEON 6ESE	IA	0.15	0.16
LLNN1	LINCOLN FIRE STA 5	NE	0.15E	0.16
BVRN8	LINTON, BEAVER CR	ND	0.15E	0.16
LYNN1	LYNCH	NE	0.15E	0.16
DEOI4	MISSOURI VALLEY 10W	IA	0.15	0.16
BNNS2	NEMO, BOXELDER CR	SD	0.15E	0.16

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OELS2	OELRICHS	SD	0.15E	0.16
HHDS2	OELRICHS, HORSEHEAD C	SD	0.15	0.16
PTBN8	PETTIBONE	ND	0.15E	0.16
PTMN1	PLATTS MOUTH 1E	NE	0.15E	0.16
RRDM8	RED ROCK RAW	MT	0.15E	0.16
SPRI4	SPIRIT LAKE	IA	0.15E	0.16
TQE	TEKAMAH	NE	0.15	0.16
WEEN1	WEeping WATER 3N	NE	0.15E	0.16
WTWS2	WHITEWOOD 1S	SD	0.15E	0.16
WRVM8	WISE RIVER 3WNW	MT	0.15E	0.16
ALRI4	ALLERTON	IA	0.14E	0.14
BCNI4	BEACONSFIELD	IA	0.14	0.14
BLAN1	BLAIR 2E, MISSOURI R	NE	0.14E	0.14
BRSS2	BRISTOL 5SW	SD	0.14E	0.14
CARN8	CARRINGTON	ND	0.14E	0.14
CHRI4	CHARITON 1E	IA	0.14	0.14

DERS2	DELL RAPIDS 2SW	SD	0.14E	0.14
EKWN1	ELKHORN 1NW	NE	0.14E	0.14
GNVS2	GANN VALLEY	SD	0.14E	0.14
GNTM7	GRANT CITY	MO	0.14E	0.14
GREN1	GREELEY	NE	0.14	0.14
GSDN1	GRETNA 3NE	NE	0.14E	0.14
HSNS2	HARRISON 4W	SD	0.14E	0.14
HUMS2	HUMBOLT	SD	0.14E	0.14
LOCM8	LOCATE, POWDER R	MT	0.14E	0.14
MNLN1	MANLEY	NE	0.14E	0.14
NRLN1	NORTH LOUP	NE	0.14E	0.14
OZMN1	OSMOND	NE	0.14E	0.14
PAIN1	PALISADE	NE	0.14E	0.14
PALN1	PALISADE, FRENCHMAN	NE	0.14	0.14
PLVN1	PLAINVIEW	NE	0.14E	0.14
PSPN1	PONCA STATE PARK	NE	0.14E	0.14
BIGS2	RAPID CITY, RAPID CR	SD	0.14	0.14
RHSS2	REE HEIGHTS 5S	SD	0.14E	0.14
SPAW4	SOUTH PASS CITY	WY	0.14E	0.14
TEKN1	TEKAMAH	NE	0.14E	0.14
TTNN1	TRENTON DAM	NE	0.14	0.14
WISM8	WISDOM	MT	0.14E	0.14
BRDS2	BEAR RIDGE	SD	0.13E	0.13
BPKS2	BLIND PARK #2	SD	0.13E	0.13
CTEN1	CRETE	NE	0.13E	0.13
CRTN1	CRETE 1W, BIG BLUE R	NE	0.13E	0.13
RASW4	DUBOIS 22SW	WY	0.13E	0.13
DNCN1	DUNCAN 2S, PLATTE R	NE	0.13E	0.13
FTCN1	FORT CALHOUN	NE	0.13E	0.13
GCOS2	GRACE COOLIDGE CR	SD	0.13E	0.13
MOWH1	GRANT CITY 4WSW	MO	0.13E	0.13
GRTM7	GRANT CITY 5WSW	MO	0.13	0.13
LASS2	HARROLD 28S	SD	0.13E	0.13
HMRN1	HOMER, OMAHA CR	NE	0.13E	0.13
3OI	LAMONI	IA	0.13	0.13
LAN52	LANTRY 4NW RAWS	SD	0.13	0.13
LRVC2	LONG DRAW RES SNOTEL	CO	0.13E	0.13

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MMON1	MALMO 3E	NE	0.13E	0.13
MAPI4	MAPLETON, MAPLE R	IA	0.13E	0.13
RAPS2	PACTOLA DAM	SD	0.13	0.13
PACS2	PACTOLA RESERVOIR	SD	0.13E	0.13
RHIS2	REE HEIGHTS 6SW	SD	0.13E	0.13
RHGS2	REE HEIGHTS 8S	SD	0.13E	0.13
BSHW4	RYAN PARK, BRUSH CR	WY	0.13E	0.13
FSD	SIOUX FALLS	SD	0.13	0.13
FSDS2	SIOUX FALLS WFO	SD	0.13E	0.13
STEN8	STEELE 3N	ND	0.13E	0.13
SWAN1	SWAN LAKE	NE	0.13E	0.13
9V2	TRENTON DAM 8SSW	NE	0.13E	0.13
VLRW4	VALLEY 9NNE	WY	0.13E	0.13
WLPS2	WALL LAKE	SD	0.13	0.13

WLKS2	WALL LAKE	SD	0.13E	0.13
BEYM7	BETHANY, E FK BIG CR	MO	0.12	0.13
BLRN1	BLAIR	NE	0.12E	0.13
BKTI4	BROKEN KETTLE RAWS	IA	0.12E	0.13
BFGS2	BUFFALO GAP,CHEYENNE	SD	0.12E	0.13
BGFS2	BUFFALO GAP,CHEYENNE	SD	0.12E	0.13
CLDW4	BURRIS 10SW	WY	0.12E	0.13
CTCS2	CASTLE CREEK ABV RES	SD	0.12	0.13
CYTS2	CLAYTON, WOLF CR	SD	0.12E	0.13
CLOI4	CLIO 4NW	IA	0.12E	0.13
DRFS2	DEERFIELD RESERVOIR	SD	0.12E	0.13
FOD	FT DODGE	IA	0.12	0.13
HOWN1	HOWELLS	NE	0.12E	0.13
KNNM5	KENNETH 3NE	MN	0.12E	0.13
SNOM8	LEWISTOWN 20SW	MT	0.12E	0.13
LDMS8	LINDSAY	MT	0.12E	0.13
LOUN1	LOUISVILLE, PLATTE R	NE	0.12E	0.13
MARN1	MARTINSBURG	NE	0.12E	0.13
MYLM7	MARYVILLE 1E	MO	0.12E	0.13
MYVM7	MARYVILLE, 102 RIVER	MO	0.12	0.13
MRDS2	MISSION RIDGE 5NW	SD	0.12E	0.13
NFLN1	NORFOLK 4W	NE	0.12	0.13
OGAS2	OGLALA 1S	SD	0.12E	0.13
ONLN1	ONEILL	NE	0.12	0.13
OSMN1	OSMOND	NE	0.12E	0.13
RNDN1	RANDOLPH 6S	NE	0.12E	0.13
ROSN1	ROSE 10WNW	NE	0.12E	0.13
SHEI4	SHELBY	IA	0.12E	0.13
SFLS2	SIOUX FALLS 38A	SD	0.12E	0.13
SOU	SOUTH PASS CITY 2WNW	WY	0.12E	0.13
SPDN1	SPALDING 5S, CEDAR R	NE	0.12E	0.13
TEAS2	TEA (AMRAD)	SD	0.12E	0.13
UCTM7	UNIVERSITY CITY	MO	0.12	0.13
WEBM8	WEBSTER 3E	MT	0.12E	0.13
WSTN1	WESTERN 2W	NE	0.12E	0.13
YLWM8	YELLOW MULE RAWS	MT	0.12E	0.13
AKAS2	AKASKA 21SE	SD	0.11E	0.12
BKCI4	AKRON 11E	IA	0.11E	0.12
AMW	AMES AIRPORT	IA	0.11	0.12

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ID	DESCRIPTION	STATE	06/22	SUM
ANAM8	ANACONDA	MT	0.11E	0.12
BUOS2	ANTELOPE RANGER STA	SD	0.11E	0.12
BEGN1	BENNINGTON 3E	NE	0.11E	0.12
BLIN1	BLAIR 5WNW	NE	0.11E	0.12
BRDN1	BRADSHAW	NE	0.11	0.12
BRLS2	BRISTOL 7S	SD	0.11E	0.12
CAMM7	CAMERON	MO	0.11	0.12
CSPS2	CUSTER 12ESE RAWS	SD	0.11E	0.12
DERM8	DEER LODGE 3W	MT	0.11E	0.12
DFDS2	DEERFIELD 3SE	SD	0.11E	0.12
DMX	DES MOINES WFO	IA	0.11E	0.12
3DU	DRUMMOND 2SW	MT	0.11E	0.12

DUPS2	DUPREE	SD	0.11E	0.12
ELIN1	ELI	NE	0.11E	0.12
HAFS2	HARTFORD	SD	0.11E	0.12
HZZS2	HAYES 7SW	SD	0.11E	0.12
SPLS2	HIGHMORE 18N	SD	0.11E	0.12
RTLS2	HIGHMORE 22N	SD	0.11E	0.12
HIHS2	HIGHMORE 7S	SD	0.11E	0.12
IRLN1	IRVINGTON 4NW	NE	0.11E	0.12
LWD	LAMONI	IA	0.11	0.12
CEFM8	LIMA 36ENE	MT	0.11E	0.12
LTTW4	LITTLE WARM SPRINGS	WY	0.11E	0.12
MBRM8	MAIN BOULDER RAWS	MT	0.11E	0.12
MROS2	MURDO 7WSW	SD	0.11E	0.12
NYEM8	NYE #2	MT	0.11E	0.12
CBYN1	OMAHA	NE	0.11E	0.12
ONAI4	ONAWA	IA	0.11E	0.12
ORUN1	ORUM	NE	0.11E	0.12
PSBN1	PAPILLION 6NW	NE	0.11E	0.12
MLDN1	PAPIO CREEK DAM	NE	0.11E	0.12
PCUS2	PORCUPINE	SD	0.11E	0.12
MBLW4	SARATOGA 16SE	WY	0.11E	0.12
FUHS2	SIOUX FALLS 7S	SD	0.11E	0.12
GREE007	SPALDING	NE	0.11E	0.12
WAVS2	SUX FALLS WESTERN AV	SD	0.11	0.12
UNIS2	UNION CENTER	SD	0.11E	0.12
WHON1	WAHOO	NE	0.11E	0.12
WAKN1	WAKEFIELD	NE	0.11E	0.12
WTRN1	WATERLOO, ELKHORN R	NE	0.11E	0.12
WGS2	WESSINGTON 8NE	SD	0.11E	0.12
WPTN1	WEST POINT	NE	0.11	0.12
WPNN1	WEST POINT, ELKHORN R	NE	0.11E	0.12
WHIS2	WHITEHORSE, MOREAU R	SD	0.11E	0.12
WISN1	WISNER	NE	0.11E	0.12
WORM7	WORTH 4W	MO	0.11E	0.12
ADRN8	ADRIAN	ND	0.10E	0.11
MGB2	ALMA 5N	CO	0.10E	0.11
BTMC2	BATTLEMENT MESA	CO	0.10E	0.11
BLTM8	BEARTOOTH LAKE	MT	0.10	0.11
BPSC2	BERTHOUD PASS	CO	0.10E	0.11
BTSC2	BERTHOUD SUMMIT	CO	0.10	0.11
SNDW4	BEULAH 2S, SAND CR	WY	0.10E	0.11

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ID	DESCRIPTION	STATE	06/22	SUM
BLWW4	BLACKWATER	WY	0.10	0.11
BMFM8	BLOOMFIELD 5NNE	MT	0.10E	0.11
BOXM8	BOX CANYON	MT	0.10	0.11
BZEM8	BOZEMAN STATE UNIV	MT	0.10E	0.11
ATRS2	BUFFALO 14SE	SD	0.10E	0.11
DINW4	BURRIS, DINWOODY CR	WY	0.10E	0.11
CMRM7	CAMERON 4NW	MO	0.10E	0.11
CANW4	CANYON 2SSW	WY	0.10	0.11
CAYW4	CANYON RANGER STA	WY	0.10E	0.11
HRSN1	CHADRON 6S RAWS	NE	0.10	0.11

CINW4	CINNABAR PARK	WY	0.10E	0.11
CPSC2	COLUMBINE PASS	CO	0.10	0.11
COLN1	COLUMBUS 3NE	NE	0.10E	0.11
CRBI1	CRAB CREEK	ID	0.10	0.11
DALM8	DALY CREEK	MT	0.10	0.11
DELS2	DELL RAPIDS	SD	0.10E	0.11
DKEC2	DRAKE, BIG THOMPSON	CO	0.10	0.11
DKKC2	DRAKE, NORTH FORK	CO	0.10E	0.11
EKIM8	EKALAKA 7SE	MT	0.10E	0.11
EMRN1	EMERSON	NE	0.10E	0.11
CWCC2	EMPIRE 2SE, CLEAR CR	CO	0.10E	0.11
ENSM8	ENNIS	MT	0.10E	0.11
FERS2	FERNEY	SD	0.10E	0.11
GLNI4	GLENWOOD	IA	0.10	0.11
GLDC2	GOLDEN	CO	0.10E	0.11
GLNC2	GOLDEN GDDS	CO	0.10	0.11
DCMC2	GRANT 5NW	CO	0.10E	0.11
HMKW4	HAMS FORK	WY	0.10	0.11
HNKI4	HANCOCK, WEST NISH	IA	0.10E	0.11
HRTN1	HARTINGTON	NE	0.10E	0.11
HSII4	HASTINGS 4NE	IA	0.10E	0.11
HRMN1	HERMAN	NE	0.10E	0.11
HOOC2	HOOSIER PASS	CO	0.10	0.11
HOPM7	HOPKINS	MO	0.10	0.11
HOKI4	HORNICK, W FK DITCH	IA	0.10	0.11
JAC	JACKSON HOLE AIRPORT	WY	0.10E	0.11
JWGC2	JACKWHACKER GULCH	CO	0.10	0.11
JWRC2	JOE WRIGHT	CO	0.10	0.11
JNPC2	JONES PASS	CO	0.10	0.11
KDAS2	KADOKA	SD	0.10E	0.11
KNDW4	KENDALL	WY	0.10	0.11
KSTS2	KEYSTONE, SPRING CR	SD	0.10E	0.11
LVRM8	LAKEVIEW RIDGE	MT	0.10	0.11
LDOM7	LAREDO, MEDICINE CR	MO	0.10	0.11
ANNS2	LEAD 6SW, ANNIE CR	SD	0.10	0.11
LEOS2	LEOLA SDSU	SD	0.10E	0.11
LWSW4	LEWIS LAKE DIVIDE	WY	0.10	0.11
LNIN1	LINCOLN FIRE STA 11	NE	0.10E	0.11
LTWW4	LITTLE WARM SPGS SCS	WY	0.10	0.11
LVGM8	LIVINGSTON 12S	MT	0.10E	0.11
LUDS2	LUDLOW 3SSE	SD	0.10E	0.11
MDLI1	MEADOW LAKE	ID	0.10	0.11
MDDW4	MIDDLE POWDER	WY	0.10	0.11

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MOOW4	MOOSE	WY	0.10E 0.11
MTKM8	MOUNT LOCKHART	MT	0.10 0.11
OAKN1	OAKLAND	NE	0.10E 0.11
OBEK1	OBERLIN	KS	0.10E 0.11
OBRK1	OBERLIN	KS	0.10 0.11
OBNK1	OBERLIN, SAPPA CR	KS	0.10E 0.11
ONTS2	ORIENT	SD	0.10E 0.11
OSCN1	OSCEOLA	NE	0.10 0.11

OLWW4	OWL CREEK	WY	0.10	0.11
PKCC2	PARK CONE	CO	0.10	0.11
PHBW4	PHILLIPS BENCH	WY	0.10	0.11
PNHM8	PINE HILL RAW	MT	0.10E	0.11
IEN	PINE RIDGE	SD	0.10	0.11
PNES2	PINE RIDGE 2SE	SD	0.10E	0.11
PRGS2	PINE RIDGE RAW	SD	0.10E	0.11
PLTN1	PLATTSMOUTH 1E	NE	0.10E	0.11
PWDW4	POWDER RIVER PASS	WY	0.10	0.11
RCH	RED CANYON	WY	0.10E	0.11
ID8S2	REDFIELD, TURTLE CR	SD	0.10E	0.11
ROAC2	ROACH	CO	0.10	0.11
SHLN1	SHELBY 3NE	NE	0.10E	0.11
RSRS2	SIOUX FALLS 5SW	SD	0.10E	0.11
SXFS2	SIOUX FALLS NO CLIFF	SD	0.10E	0.11
SIFS2	SIOUX FALLS,SKUNK CR	SD	0.10E	0.11
SBCW4	SOUTH BRUSH CREEK	WY	0.10	0.11
CSPC2	SPICER	CO	0.10E	0.11
STPN1	ST PAUL 4N	NE	0.10	0.11
SPUN1	ST PAUL, NORTH LOUP	NE	0.10E	0.11
STPM7	ST PETERS	MO	0.10E	0.11
SPEM7	ST PETERS 2SSE	MO	0.10	0.11
0362N8	STEELE 7SW	ND	0.10E	0.11
SRPN1	SURPRISE, BIG BLUE R	NE	0.10E	0.11
SYRW4	SYLVAN ROAD	WY	0.10	0.11
TEPM8	TEPEE POINT RAW	MT	0.10E	0.11
TOWC2	TOWER	CO	0.10	0.11
TOPW4	TWO OCEAN PLATEAU	WY	0.10	0.11
UNGN1	UEHLING	NE	0.10	0.11
UHLN1	UEHLING	NE	0.10E	0.11
UEHN1	UEHLING, LOGAN CR	NE	0.10E	0.11
UVCC2	UNIVERSITY CAMP	CO	0.10	0.11
VGLS2	VIRGIL	SD	0.10E	0.11
RAWC2	WALDEN 15ENE	CO	0.10	0.11
WBSW4	WEBBER SPRINGS	WY	0.10	0.11
WBR52	WEBSTER	SD	0.10E	0.11
WESN1	WESTON 3NW	NE	0.10	0.11
WNSN1	WINSIDE	NE	0.10E	0.11
COPK5	ALMA 3N	CO	0.09E	0.10
BTLS2	BATESLAND	SD	0.09E	0.10
BCKN1	BATTLE CREEK	NE	0.09E	0.10
BNFM8	BRENNER GDDS	MT	0.09E	0.10
COLF003	CLARKSON 8SSW	NE	0.09E	0.10
DBYM8	DERBY MOUNTAIN RAW	MT	0.09E	0.10
ENNM8	ENNIS RAW	MT	0.09E	0.10

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FALS2	FAULKTON	SD	0.09E 0.10
FAUS2	FAULKTON 1NW	SD	0.09E 0.10
FCLN1	FORT CALHOUN 4W	NE	0.09E 0.10
0391N8	FREDONIA 1E	ND	0.09E 0.10
FNDN1	FRIEND 3E	NE	0.09 0.10
FCKN1	FT CROOK, PAPILLION	NE	0.09E 0.10

GNAM8	GLENTANA 4SW	MT	0.09E	0.10
GLEI4	GLENWOOD 3SW	IA	0.09E	0.10
COJF40	GOLDEN 1NW	CO	0.09E	0.10
GOSN1	GROSS 1E	NE	0.09E	0.10
HFDS2	HARTFORD	SD	0.09E	0.10
HMNN1	HERMAN 4WSW	NE	0.09E	0.10
HGHS2	HIGHMORE	SD	0.09E	0.10
HIGS2	HIGHMORE 6SSE AMRAD	SD	0.09E	0.10
KDKS2	KADOKA 6S, WHITE R	SD	0.09	0.10
RUSS2	KEYSTONE 5SE	SD	0.09E	0.10
KEYC2	KEYSTONE 7ESE	CO	0.09E	0.10
KYLS2	KYLE	SD	0.09E	0.10
LKVM8	LAKEVIEW	MT	0.09E	0.10
LENS2	LENNOX 3NE	SD	0.09E	0.10
LIES2	LITTLE EAGLE, GRAND R	SD	0.09E	0.10
MPTI4	MAPLETON #2	IA	0.09E	0.10
MCLM8	MC LEOD 12SSW	MT	0.09E	0.10
OFLM7	OFALLON 2SSW	MO	0.09E	0.10
OPMM8	OPHEIM 12SSE	MT	0.09E	0.10
PEDN1	PENDER, LOGAN CR	NE	0.09E	0.10
UIN	QUINCY	IL	0.09	0.10
VAVS2	RAPID CITY 11W	SD	0.09	0.10
RENS2	RENNER	SD	0.09E	0.10
RCHC2	ROACH	CO	0.09E	0.10
SIO52	SIOUX FALLS	SD	0.09E	0.10
WCMS2	SIOUX FALLS 6SE	SD	0.09E	0.10
SPKM7	SPICKARD 7W	MO	0.09	0.10
SONN1	STRATTON	NE	0.09E	0.10
STTN1	STRATTON, REPUB R	NE	0.09	0.10
SRON1	STRATTON, REPUB R	NE	0.09E	0.10
SURN1	SURPRISE	NE	0.09E	0.10
TILN1	TILDEN	NE	0.09E	0.10
UNCM7	UNIVERSITY CITY	MO	0.09E	0.10
VRFN1	VALENTINE 27SSE RAWS	NE	0.09E	0.10
VPRN1	VALPARAISO	NE	0.09E	0.10
WRSM8	WISE RIVER RAWS	MT	0.09E	0.10
WLHN1	WOLBACH	NE	0.09E	0.10
ALAM7	ALBANY	MO	0.08E	0.09
ALBM7	ALBANY	MO	0.08E	0.09
AMTM7	AMITY 4NE	MO	0.08	0.09
DOHS2	BAKER PARK RAWS	SD	0.08E	0.09
BELM7	BELLEFONT NEIGHBORS	MO	0.08E	0.09
BYDW4	BOYD RIDGE RAWS	WY	0.08E	0.09
UBLC2	BRECKENRIDGE 7SSW	CO	0.08E	0.09
BRDM8	BREDETTE	MT	0.08E	0.09
LCFM8	BROCKWAY 18S	MT	0.08	0.09
CMNM8	CAMERON	MT	0.08E	0.09

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ID	DESCRIPTION	STATE	06/22	SUM
CRGN8	CARRINGTON 4N	ND	0.08E	0.09
CETS2	CENTERVILLE 4N	SD	0.08E	0.09
CHMN1	CHAMBERS	NE	0.08	0.09
CORW4	CORA	WY	0.08E	0.09

DDGN1	DODGE	NE	0.08E	0.09
TOFW4	DUBOIS 41NNW	WY	0.08E	0.09
EABS2	EAGLE BUTTE	SD	0.08E	0.09
EKLM8	EKALAKA	MT	0.08E	0.09
GPKM8	GATE PARK RAW	MT	0.08E	0.09
HLKI4	HAVELOCK	IA	0.08E	0.09
HORI4	HORNICK 5S	IA	0.08E	0.09
HVNS2	HOVEN	SD	0.08E	0.09
IRRS2	INTERIOR, WHITE R	SD	0.08	0.09
IWDI4	INWOOD	IA	0.08E	0.09
INWI4	INWOOD	IA	0.08E	0.09
JRNM8	JORDAN 43ENE	MT	0.08E	0.09
KEBN1	KENNARD 2SE	NE	0.08E	0.09
LAUN1	LAUREL	NE	0.08E	0.09
LOGI4	LOGAN	IA	0.08E	0.09
LYON1	LYONS	NE	0.08E	0.09
MIW	MARSHALLTOWN AIRPORT	IA	0.08	0.09
MLNS2	MILLTOWN, JAMES R	SD	0.08E	0.09
OLDW4	OLD BATTLE	WY	0.08E	0.09
ONNS2	ONIDA 22NE	SD	0.08E	0.09
ORLS2	ORAL	SD	0.08	0.09
HOLT008	PAGE 5WNW	NE	0.08E	0.09
PNDN1	PENDER	NE	0.08E	0.09
PKS	PICKSTOWN	SD	0.08E	0.09
PKSS2	PICKSTOWN	SD	0.08E	0.09
PIER008	PIERCE 9W	NE	0.08E	0.09
PLGN1	PILGER, ELKHORN R	NE	0.08E	0.09
PTCN1	PLATTE CENTER	NE	0.08E	0.09
PLKN1	POLK	NE	0.08E	0.09
PRTM7	PRINCETON	MO	0.08	0.09
UPCS2	RAPID CITY 13W	SD	0.08E	0.09
REES2	REE HEIGHTS	SD	0.08E	0.09
RCHM8	RICHEY 10SW	MT	0.08E	0.09
SENS2	SENECA	SD	0.08E	0.09
RSIS2	SILVER CITY 1W	SD	0.08	0.09
SPBM8	SPOTTED BEAR RAW	MT	0.08E	0.09
SFMS2	SUX FALLS, MAPLE ST	SD	0.08	0.09
TNSW4	TEN SLEEP 16SSE	WY	0.08E	0.09
TOBN1	TOBIAS	NE	0.08E	0.09
VALN1	VALENTINE NWR	NE	0.08E	0.09
VDGN1	VERDIGRE	NE	0.08E	0.09
VRNS2	VERMILLION	SD	0.08E	0.09
SVMS2	VERMILLION STORMNET	SD	0.08E	0.09
VBVS2	VICTORIA DAM	SD	0.08	0.09
VOLM8	VOLBORG	MT	0.08E	0.09
AWSW4	ADAMS RAW	WY	0.07	0.08
ABAM7	ALBANY, E FK GRAND R	MO	0.07E	0.08
ANDS2	ANDOVER	SD	0.07E	0.08
ARCN1	ARCADIA	NE	0.07E	0.08

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BCTN1	BANCROFT, LOGAN CR	NE	0.07E	0.08
BELN1	BELLVUE	NE	0.07E	0.08

BLBN1	BLAIR 4SW	NE	0.07E	0.08
BCHM7	BOSCHERTOWN 3SW	MO	0.07E	0.08
BWSM8	BOZEMAN 4W AGRIMET	MT	0.07E	0.08
BULS2	BUFFALO 14SSW AMRAD	SD	0.07E	0.08
BRLM7	BURLINGTON JCT 1W	MO	0.07E	0.08
BRJM7	BURLINGTON JUNCTION	MO	0.07E	0.08
BRRW4	BURRIS	WY	0.07E	0.08
CSNI4	CARSON 3NNE	IA	0.07E	0.08
CENS2	CENTERVILLE 6SE	SD	0.07E	0.08
CTLN1	CENTRAL CITY	NE	0.07E	0.08
CLAN1	CLATONIA	NE	0.07E	0.08
CLEN1	COLERIDGE	NE	0.07E	0.08
CLBN1	COLUMBUS, SHELL CR	NE	0.07E	0.08
WBRM8	CORVALLIS 2NE	MT	0.07E	0.08
COTM7	COTTLEVILLE	MO	0.07E	0.08
CRKS2	CROOKS	SD	0.07E	0.08
WCCS2	CROOKS, WILLOW CR	SD	0.07	0.08
DVSS2	DAVIS, VERMILLION R	SD	0.07E	0.08
DSM	DES MOINES	IA	0.07	0.08
DIMS2	DIMOCK	SD	0.07E	0.08
OTOE008	EAGLE 4S	NE	0.07E	0.08
EPIC2	EMPIRE	CO	0.07E	0.08
GRSN1	GRESHAM 3W	NE	0.07E	0.08
HWKM5	HARDWICK 2NW	MN	0.07E	0.08
NESN1	HASKELL AGRICULTURAL	NE	0.07E	0.08
HRTM8	HEART BUTTE	MT	0.07E	0.08
SHIM5	HILLS	MN	0.07E	0.08
HSKN1	HOSKINS	NE	0.07E	0.08
IDSC2	IDAHO SPRINGS 1NNW	CO	0.07E	0.08
INTS2	INTERIOR 3NE	SD	0.07E	0.08
GAPM8	JUDITH GAP	MT	0.07E	0.08
LCRM7	LUCERNE, MEDICINE CR	MO	0.07E	0.08
LYMI4	LYMAN	IA	0.07E	0.08
LYNS2	LYONS 5SSW	SD	0.07E	0.08
MAXN1	MAX 13N	NE	0.07E	0.08
HACM8	MILES CITY 17NE	MT	0.07E	0.08
MVLI4	MISSOURI VALLEY 1NNE	IA	0.07E	0.08
OFF	OFFUTT FIELD	NE	0.07	0.08
HITN1	OMAHA (HITCHCOCK PK)	NE	0.07E	0.08
PPLN1	PAPILLION	NE	0.07E	0.08
PWBN1	PAPILLION #2	NE	0.07E	0.08
PARS2	PARKSTON 8ENE	SD	0.07E	0.08
NEBS2	PINE RIDGE, WHITE R	SD	0.07E	0.08
PNNS2	PINNACLES RANGER STA	SD	0.07E	0.08
POWM8	POWDERVILLE 8NNE	MT	0.07E	0.08
RDWS2	REDWATER CREEK	SD	0.07	0.08
RWYM7	RIDGEWAY	MO	0.07	0.08
WKO	ROCKGLENN	SK	0.07	0.08
RSDM7	ROSENDALE, 102 RIVER	MO	0.07	0.08
SOLI4	SOLDIER	IA	0.07E	0.08
SCHM7	ST CHARLES ELM POINT	MO	0.07E	0.08

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SPLN1	ST PAUL #2 MID LOUP	NE	0.07E	0.08
DUSM8	SWIFT DAM	MT	0.07E	0.08
TYNM8	TERRY 21NNW	MT	0.07E	0.08
THRW4	THOROFARE	WY	0.07E	0.08
WKAS2	WAKONDA, VERMILLION	SD	0.07E	0.08
WSPS2	WESSINGTON SPRINGS	SD	0.07E	0.08
WSWS2	WESSINGTON SPRNG 7SW	SD	0.07E	0.08
WCRM8	WICKED CREEK RAWS	MT	0.07E	0.08
AIA	ALLIANCE	NE	0.06	0.06
MSQC2	ALMA 1S	CO	0.06E	0.06
ALPS2	ALPENA, SAND CR	SD	0.06E	0.06
ATAW4	ALTA	WY	0.06E	0.06
AMEN1	AMELIA	NE	0.06E	0.06
ATLI4	ATLANTIC 1NE	IA	0.06	0.06
ATCI4	ATLANTIC 5SW, E NISH	IA	0.06E	0.06
HGRC2	BAILEY 7NW	CO	0.06E	0.06
BLUM8	BLUFF CREEK RAWS	MT	0.06	0.06
BOI	BOISE WFO	ID	0.06E	0.06
BRAS2	BRANDON	SD	0.06E	0.06
COSU40	BRECKENRIDGE 3SE	CO	0.06E	0.06
BKRM7	BRECKENRIDGE HILLS	MO	0.06E	0.06
BNLN1	BROWNLEE	NE	0.06E	0.06
BBRW4	BUFFALO BILL ABV	WY	0.06E	0.06
BEAS2	BUFFALO GAP 2S	SD	0.06E	0.06
CNNS2	CANTON	SD	0.06E	0.06
CSHM8	CASHE CREEK	MT	0.06E	0.06
CSAI4	CASTANA EXP FARM	IA	0.06E	0.06
COOC2	COMO 4SE	CO	0.06E	0.06
COSS2	CORSON, SPLIT ROCK C	SD	0.06	0.06
BURT002	CRAIG 6S	NE	0.06E	0.06
DCTN1	DECATUR, MISSOURI R	NE	0.06E	0.06
DRGN1	DORCHESTER, BIG BLUE	NE	0.06E	0.06
COLR225	DRAKE 3NNE	CO	0.06E	0.06
DUNN1	DUNBAR 4N	NE	0.06E	0.06
EAGS2	EAGLE BUTTE (AMRAD)	SD	0.06E	0.06
EGHM8	EAGLEHEAD	MT	0.06E	0.06
YEN	ESTEVAN	SK	0.06	0.06
FRMN1	FAIRMONT	NE	0.06E	0.06
MTDN1	FLAXVILLE 5E	MT	0.06E	0.06
FTBS2	FORESTBURG 3NE	SD	0.06E	0.06
GARS2	GARRETSON	SD	0.06E	0.06
GDYC2	GLENDEVEY	CO	0.06E	0.06
GLKC2	GRAND LAKE 1NW	CO	0.06E	0.06
HDRN1	HADAR #2	NE	0.06E	0.06
HADN1	HADAR 1SE	NE	0.06E	0.06
HSYN1	HALSEY 2W	NE	0.06	0.06
HMLM7	HAMILTON 2W	MO	0.06	0.06
HARS2	HARDING 3SE	SD	0.06E	0.06
HTFS2	HARTFORD, SKUNK CR	SD	0.06E	0.06
HASN1	HAY SPRINGS 12S	NE	0.06E	0.06
HTBM8	HEART BUTTE 1NW	MT	0.06E	0.06
HGMS2	HIGHMORE 16N	SD	0.06E	0.06
HIMS2	HIGHMORE 23N	SD	0.06E	0.06

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ID	DESCRIPTION	STATE	06/22	SUM
COCC16	IDAHO SPRINGS	CO	0.06E	0.06
COCC15	IDAHO SPRINGS 1NNE	CO	0.06E	0.06
LADS2	LADNER 9SW	SD	0.06E	0.06
LDRI1	LEADORE	ID	0.06E	0.06
LEIW4	LEIGH CREEK RAW	WY	0.06E	0.06
LNXI4	LENOX	IA	0.06E	0.06
LNK	LINCOLN	NE	0.06	0.06
LION1	LINCOLN FIRE STA 2	NE	0.06E	0.06
LNGN1	LINCOLN FIRE STA 9	NE	0.06E	0.06
LSNM8	LITTLE SNOWY RAW	MT	0.06E	0.06
MDKN8	MADDOCK	ND	0.06E	0.06
MALI4	MALVERN	IA	0.06E	0.06
MRON8	MARION	ND	0.06E	0.06
MCW	MASON CITY AIRPORT	IA	0.06	0.06
MNDM7	MENDON, HICKORY BR	MO	0.06E	0.06
MRLI4	MERRILL, FLOYD R	IA	0.06E	0.06
MWBN1	MILLARD	NE	0.06E	0.06
MSSM7	MUSSEL FORK	MO	0.06	0.06
NZLN1	NENZEL 23SSW	NE	0.06E	0.06
BCNW4	NEWCASTLE 5E	WY	0.06E	0.06
NOFN1	NORFOLK 2N	NE	0.06E	0.06
ORHM8	OPHEIM 21NW, ROCK CR	MT	0.06E	0.06
PCFI4	PACIFIC JUNCTION	IA	0.06E	0.06
PIRN1	PIERCE #1	NE	0.06	0.06
PRCN1	PIERCE 2SE	NE	0.06E	0.06
PINW4	PINEDALE 1NE	WY	0.06E	0.06
POLM7	POLO	MO	0.06	0.06
RPHS2	RALPH 1N	SD	0.06E	0.06
SPCW4	SOUTH PASS CITY 3NNE	WY	0.06E	0.06
SCLM7	ST CHARLES 1E	MO	0.06E	0.06
SULM8	SULA 3ENE	MT	0.06E	0.06
TTNM7	TRENTON	MO	0.06	0.06
TNBM8	TWIN BRIDGES	MT	0.06E	0.06
WLTN1	WALTHILL 1E	NE	0.06	0.06
WHLN1	WALTHILL, S OMAHA CR	NE	0.06E	0.06
BERS2	WANBLEE 9WSW	SD	0.06E	0.06
NLWW4	WASHAKIE, LTL WIND R	WY	0.06E	0.06
WAUN1	WAUNETA	NE	0.06E	0.06
JVWM8	WHITEHALL 7SW	MT	0.06E	0.06
WRVW4	WIND RIVER	WY	0.06E	0.06
YKN	YANKTON	SD	0.06	0.06
AHLN1	ASHLAND	NE	0.05E	0.05
ASDN1	ASHLAND #1	NE	0.05E	0.05
COPK69	BAILEY 6NNW	CO	0.05E	0.05
BOUS2	BEAR BUTTE CREEK	SD	0.05E	0.05
BVRN1	BEAVER CROSSING	NE	0.05E	0.05
BONW4	BONDURANT SCHOOL	WY	0.05E	0.05
BOXN1	BOX BUTTE DAM	NE	0.05E	0.05
BKYM8	BROCKWAY 3WSW	MT	0.05E	0.05
BRWM7	BROWNING, LOCUST CR	MO	0.05E	0.05
MNKI4	BRUNSVILLE	IA	0.05E	0.05
BGPS2	BUFFALO GAP	SD	0.05E	0.05
GCRC2	CABIN CREEK	CO	0.05E	0.05

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STATION ID	DESCRIPTION	STATE	06/22	PERIOD SUM
CANS2	CANTON, BIG SIOUX R	SD	0.05E	0.05
CARM8	CARDWELL	MT	0.05E	0.05
CLLM8	CARLYLE 13NW	MT	0.05E	0.05
CID	CEDAR RAPIDS AIRPORT	IA	0.05	0.05
CENW4	CENTENNIAL 1NE	WY	0.05E	0.05
CDNN1	CHADRON	NE	0.05E	0.05
CDJ	CHILLICOTHE	MO	0.05	0.05
CIRM8	CIRCLE	MT	0.05E	0.05
CLKN1	CLARKSON	NE	0.05E	0.05
SFOW4	CODY 19SW	WY	0.05E	0.05
COYW4	CODY 21SW	WY	0.05E	0.05
COLC2	COLUMBINE LODGE	CO	0.05E	0.05
CRSN1	CRESTON	NE	0.05E	0.05
RIPS2	DEADMAN GULCH	SD	0.05	0.05
COLR720	DRAKE 5WNW	CO	0.05E	0.05
DBSI1	DUBOIS EXP STATION	ID	0.05E	0.05
DPRS2	DUPREE 15SSE	SD	0.05E	0.05
EGYN8	EDGELEY 3WNW	ND	0.05E	0.05
EDSM7	ELDORADO SPRINGS	MO	0.05	0.05
BEVW4	ENCAMPMENT, BEAVER C	WY	0.05E	0.05
FRPC2	FAIRPLAY 1SE	CO	0.05E	0.05
COPK15	FAIRPLAY 3WNW	CO	0.05E	0.05
FSDN8	FESSENDEN	ND	0.05E	0.05
GLLM7	GALLATIN 1W	MO	0.05	0.05
GAZM7	GALLATIN, GRAND R	MO	0.05E	0.05
GARN1	GARLAND	NE	0.05E	0.05
GOEN1	GOEHNER	NE	0.05E	0.05
GOLC2	GOLDEN 3S	CO	0.05E	0.05
COJF257	GOLDEN 4NNW	CO	0.05E	0.05
GEVC2	GOLDEN 4SW	CO	0.05E	0.05
HAYN1	HAYES CENTER 1NW	NE	0.05	0.05
HILS2	HILL CITY 5S AMRAD	SD	0.05	0.05
HHRW4	HYATTVILLE 6NE	WY	0.05E	0.05
JMEM7	JAMESON (DNR)	MO	0.05	0.05
MIHC2	JEFFERSON 10SE	CO	0.05E	0.05
KENI4	KENNEBEC, LTL SIOUX	IA	0.05E	0.05
KGCM7	KING CITY	MO	0.05E	0.05
KNXM7	KNOXVILLE	MO	0.05E	0.05
KRAN1	KRAMER 2E	NE	0.05E	0.05
LCRW4	LARSEN CREEK SNOTEL	WY	0.05E	0.05
LNXS2	LENNOX	SD	0.05E	0.05
LSTI4	LESTER	IA	0.05E	0.05
LWSM8	LEWISTOWN 10S	MT	0.05E	0.05
LOPW4	LOOMIS PARK	WY	0.05E	0.05
MADM8	MADISON DAM BLO	MT	0.05E	0.05
MDWN1	MEADOW GROVE	NE	0.05E	0.05
MLNM7	MILAN	MO	0.05E	0.05
MIB	MINOT AFB	ND	0.05	0.05
MONI4	MONDAMIN	IA	0.05E	0.05
MTAI4	MOUNT AYR	IA	0.05	0.05
NCLW4	NEWCASTLE	WY	0.05E	0.05
OFK	NORFOLK AIRPORT	NE	0.05	0.05
NFKN1	NORFOLK, ELKHORN R	NE	0.05E	0.05

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TCKW4	NORRIS JUNCTION 1NW	WY	0.05E	0.05
PLDN1	PLEASANTDALE 2NW	NE	0.05	0.05
RAYN1	RAYMOND 4W	NE	0.05E	0.05
REJ	REDIG	SD	0.05E	0.05
RUSN1	RUSHVILLE	NE	0.05E	0.05
SCBM8	SCOBAY	MT	0.05E	0.05
SCOM8	SCOBAY 4NW	MT	0.05E	0.05
STL	ST LOUIS	MO	0.05	0.05
SSCM7	ST LOUIS SCIENCE CTR	MO	0.05E	0.05
SXXW4	SUSSEX, POWDER R	WY	0.05	0.05
VEDN1	VERDIGRE, VERDIGRE CR	NE	0.05E	0.05
VIGS2	VIRGIL 2NW	SD	0.05E	0.05
WADC2	WALDEN	CO	0.05E	0.05
WEYM8	WEST YELLOWSTONE 9NW	MT	0.05E	0.05
WHHM8	WHITEHALL RAWES	MT	0.05E	0.05
DDNW4	ALADDIN 6NW	WY	0.04E	0.04
ALTS2	ALCESTER	SD	0.04E	0.04
ALIN1	ALLIANCE 1WNW	NE	0.04E	0.04
BUCC2	ALMA 4SE	CO	0.04E	0.04
ASHN1	ASHTON	NE	0.04E	0.04
AUBN1	AUBURN 5ESE	NE	0.04	0.04
ABRN1	AUBURN, LTL NEMAHA R	NE	0.04E	0.04
AURN1	AURORA	NE	0.04E	0.04
BLYK1	BAILEYVILLE	KS	0.04	0.04
BAYM8	BAYLOR	MT	0.04E	0.04
BLKC2	BEAR LAKE	CO	0.04E	0.04
BKRW4	BECHLER RANGER STA	WY	0.04E	0.04
BLGN1	BELGRADE	NE	0.04E	0.04
BELS2	BELLE FOURCHE	SD	0.04E	0.04
RWRS2	BELLE FOURCHE 1NW	SD	0.04	0.04
BLFS2	BELLE FOURCHE 9W	SD	0.04E	0.04
BEBN1	BENNINGTON 2NW	NE	0.04E	0.04
BRTN8	BERTHOLD	ND	0.04E	0.04
CUST022	BERWYN 4NNE	NE	0.04E	0.04
BOYN1	BOYSTOWN	NE	0.04E	0.04
BOHN1	BOYSTOWN #2	NE	0.04E	0.04
BZMM8	BOZEMAN 6W EXP FARM	MT	0.04E	0.04
BWXW4	BUFFALO BILL RES	WY	0.04E	0.04
CNSM7	CAINSVILLE	MO	0.04	0.04
CNTS2	CANTON (AMRAD)	SD	0.04E	0.04
CHLM7	CHILLICOTHE	MO	0.04E	0.04
CHUM7	CHULA, MUDDY CR	MO	0.04E	0.04
COLN8	COLUMBUS	ND	0.04E	0.04
COUW4	COULTER CREEK	WY	0.04E	0.04
DNBN1	DANNEBROG #2	NE	0.04E	0.04
DABN1	DANNEBROG 4NW	NE	0.04E	0.04
DBGN1	DANNEBROG, TURKEY CR	NE	0.04	0.04
DRBM8	DARBY	MT	0.04E	0.04
EDGN8	EDGELEY 3W	ND	0.04E	0.04
EMSS2	ELM SPRINGS 4NW	SD	0.04E	0.04
HAYE002	ELSIE 14SE	NE	0.04E	0.04

ENDN1	ENDERS DAM	NE	0.04	0.04
FRUC2	FRASER 10SE	CO	0.04E	0.04

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FRAC2	FRASER 6W	CO	0.04E	0.04
FULS2	FULTON, ROCK CR	SD	0.04E	0.04
GONC2	GOLDEN 6NW	CO	0.04E	0.04
GORN1	GORDON 6N	NE	0.04E	0.04
GRMM7	GRAHAM	MO	0.04E	0.04
GRZM7	GRAHAM, NODAWAY R	MO	0.04E	0.04
GRNM8	GRANT 5SE	MT	0.04E	0.04
GRSW4	GRASSY LAKE	WY	0.04E	0.04
GRLW4	GRASSY LAKE DAM	WY	0.04E	0.04
GRCM7	GREEN CITY 5N	MO	0.04	0.04
HRBN1	HARBINE 1WSW	NE	0.04E	0.04
HVSM7	HARVESTER	MO	0.04E	0.04
HYSN1	HAY SPRINGS	NE	0.04E	0.04
ANSM7	HERITAGE LANDING	MO	0.04E	0.04
HIAK1	HIAWATHA 9ESE	KS	0.04	0.04
NOBM8	KNOBS 4SW	MT	0.04E	0.04
NOLC2	LAKEWOOD	CO	0.04E	0.04
LWMM8	LEWISTOWN 11ESE	MT	0.04E	0.04
LNCN1	LINCOLN 4SE	NE	0.04E	0.04
LOKN1	LINCOLN 5NW, OAK CR	NE	0.04	0.04
LSCN1	LINCOLN 7NW, SALT CR	NE	0.04	0.04
MDLM8	MCLEOD	MT	0.04E	0.04
LSNN8	MINOT 3SE	ND	0.04E	0.04
GASN8	MINOT 4W	ND	0.04E	0.04
MNON8	MINOT EXP STATION	ND	0.04	0.04
MOT	MINOT INTL AIRPORT	ND	0.04	0.04
MQM	MONIDA	MT	0.04E	0.04
NRCK1	NORCATUR 3WSW	KS	0.04E	0.04
OFNM7	OFALLON	MO	0.04E	0.04
OLNM7	OFALLON 2S	MO	0.04E	0.04
OMLN1	OMAHA 5W	NE	0.04E	0.04
OPNM8	OPHEIM 10N	MT	0.04E	0.04
ORGM7	OREGON	MO	0.04E	0.04
OTOI4	OTO	IA	0.04E	0.04
HOLT009	PAGE	NE	0.04E	0.04
PNDW4	PINEDALE	WY	0.04E	0.04
PURN1	PURDUM	NE	0.04E	0.04
RLSC2	RALSTON RESERVOIR	CO	0.04E	0.04
REDS2	REDIG 11NE	SD	0.04E	0.04
ROCM7	ROCK HILL 1NE	MO	0.04E	0.04
RKSM8	ROCK SPRINGS	MT	0.04E	0.04
WREM8	ROSCOE, W ROSEBUD CR	MT	0.04E	0.04
SPPM8	SAPPINGTON HWY BR	MT	0.04E	0.04
SELK1	SELDEN 11NW	KS	0.04E	0.04
SWRN1	SEWARD #2	NE	0.04E	0.04
SVRM8	SILVER STAR	MT	0.04E	0.04
SKDM7	SKIDMORE	MO	0.04E	0.04
SET	ST CHARLES	MO	0.04	0.04
SOAM7	ST JOE RIPLEY (1)	MO	0.04E	0.04

STJ	ST JOSEPH 4NNW	MO	0.04	0.04
SJSM7	ST JOSEPH, MISSOURI	MO	0.04E	0.04
STON1	STANTON 7NE	NE	0.04E	0.04
SYCN1	SYRACUSE	NE	0.04	0.04

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WYWH1	TEN SLEEP 5NNW	WY	0.04E	0.04
TRYK1	TROY 3N	KS	0.04E	0.04
UTCN1	UTICA	NE	0.04E	0.04
VALS2	VALLEY SPRINGS	SD	0.04E	0.04
VACM8	VIRGINIA CITY	MT	0.04E	0.04
AXTM8	VIRGINIA CITY 15SE	MT	0.04E	0.04
WLDC2	WALDEN	CO	0.04E	0.04
BLCW4	WASHAKIE 19NW	WY	0.04E	0.04
KRWM7	WEBSTER GROVES 1WSW	MO	0.04E	0.04
BDLM8	WHITEHALL 4SW RAW	MT	0.04E	0.04
WBXM8	WIBAUX 2E	MT	0.04E	0.04
FWGC2	WINTER PARK 4SSE	CO	0.04E	0.04
YORN1	YORK 3N	NE	0.04	0.04
AFFM7	AFFTON	MO	0.03E	0.04
ALCS2	ALCESTER	SD	0.03E	0.04
ALAN1	ALLIANCE 1WNW	NE	0.03E	0.04
CUST015	ANSELMO 9NW	NE	0.03E	0.04
ANTN1	ANTIOCH	NE	0.03E	0.04
SMMC2	ARVADA	CO	0.03E	0.04
BALC2	BAILEY 5N	CO	0.03E	0.04
BFRN8	BALFOUR 3SW	ND	0.03E	0.04
BEAN8	BEACH	ND	0.03E	0.04
BEDI4	BEDFORD	IA	0.03	0.04
BFOS2	BELLE FOURCHE 22NNW	SD	0.03E	0.04
BFIS2	BELLE FOURCHE DIV	SD	0.03E	0.04
BTWM8	BELLTOWER	MT	0.03E	0.04
BLIN8	BERLIN	ND	0.03E	0.04
BERN8	BERTHOLD 4NW	ND	0.03E	0.04
BMKN8	BISMARCK 5NNW	ND	0.03	0.04
BIS	BISMARCK AIRPORT	ND	0.03	0.04
HCKN8	BISMARCK, HAY CREEK	ND	0.03E	0.04
BIWN8	BISMARCK, MISSOURI R	ND	0.03E	0.04
BLMI4	BLOOMFIELD 1WNW	IA	0.03	0.04
BOCM7	BOLCKOW, 102 RIVER	MO	0.03	0.04
BOWN8	BOWMAN	ND	0.03E	0.04
BOMN8	BOWMAN 3W	ND	0.03E	0.04
BWNN8	BOWMAN HALEY RES	ND	0.03E	0.04
BZLM8	BOZEMAN 5W	MT	0.03E	0.04
0885N8	BREMEN 4NW	ND	0.03E	0.04
BRKN1	BROKEN BOW #2	NE	0.03E	0.04
BKNN1	BROKEN BOW 2W	NE	0.03E	0.04
BBW	BROKEN BOW 2W	NE	0.03	0.04
BEKM7	BROOKFIELD	MO	0.03E	0.04
BRKM7	BROOKFIELD	MO	0.03E	0.04
BRON1	BROWNVILLE	NE	0.03E	0.04
BULW4	BULL LAKE OUTFLOW	WY	0.03E	0.04
CGI	CAPE GIRARDEAU AP	MO	0.03	0.04

CENK1	CENTRALIA	KS	0.03E	0.04
CPMN1	CHAPMAN	NE	0.03E	0.04
CHOM7	CHILLICOTHE RAWS	MO	0.03	0.04
CLMC2	CLIMAX 4W	CO	0.03E	0.04
TPGC2	COMO, TARRYALL CR	CO	0.03E	0.04
CPMC2	COPPER MOUNTAIN	CO	0.03E	0.04

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RED_013	DANBURY 1W	NE	0.03E	0.04
DWIN1	DE WITT	NE	0.03E	0.04
FEDC2	DENVER 7W	CO	0.03E	0.04
DVDM8	DIVIDE, BIG HOLE R	MT	0.03E	0.04
WYFM4	DUBOIS 10WNW	WY	0.03E	0.04
EBSS2	EAGLE BUTTE,CHEYENNE	SD	0.03E	0.04
EWDN1	ELKHORN 4SE	NE	0.03E	0.04
ENSN1	ENDERS, FRENCHMAN CR	NE	0.03E	0.04
ELMM8	ENNIS LAKE	MT	0.03E	0.04
EWGN1	EWING	NE	0.03E	0.04
EWIN1	EWING 1N, ELKHORN R	NE	0.03E	0.04
JEFF006	FAIRBURY 8NNW	NE	0.03E	0.04
FLAN8	FLASHER	ND	0.03	0.04
FWM8	FORKS 4NNE	MT	0.03E	0.04
FPKM8	FORT PECK DAM	MT	0.03E	0.04
FOXN8	FOXHOLM 7N	ND	0.03E	0.04
FHMN8	FOXHOLM 7N	ND	0.03E	0.04
FLTN1	FULLERTON	NE	0.03E	0.04
GNVN1	GENEVA	NE	0.03E	0.04
CCLC2	GEORGETOWN 5SSW	CO	0.03E	0.04
GLDS2	GLAD VALLEY 2W	SD	0.03E	0.04
GGW	GLASGOW INTL AIRPORT	MT	0.03	0.04
COJF16	GOLDEN 4WNW	CO	0.03E	0.04
GRDN1	GORDON 3W	NE	0.03	0.04
CSFC2	GOULD 4SE	CO	0.03E	0.04
0371N8	GRAND RAPIDS 3SW	ND	0.03E	0.04
HAWI4	HAWARDEN,BIG SIOUX R	IA	0.03E	0.04
HEMN1	HEMINGFORD	NE	0.03E	0.04
HMAN1	HERMAN	NE	0.03E	0.04
HICS2	HILL CITY	SD	0.03E	0.04
MDCS2	HILL CITY 8SW	SD	0.03E	0.04
HORC2	HOHNHOLZ RANCH	CO	0.03E	0.04
HRLC2	HOURLASS RES SNOTEL	CO	0.03E	0.04
COCC14	IDAHO SPRINGS 2WSW	CO	0.03E	0.04
IMP1	IMPERIAL	NE	0.03	0.04
ISAS2	ISABEL	SD	0.03E	0.04
JACM8	JACKSON	MT	0.03E	0.04
KLYM8	KELLY RAWS	MT	0.03E	0.04
KEYS2	KEYSTONE	SD	0.03E	0.04
GNKS2	KEYSTONE 1SW	SD	0.03	0.04
GAKS2	KEYSTONE 4SW	SD	0.03E	0.04
MOFSA041	KEYTESVILLE	MO	0.03E	0.04
MTNW4	KINNEAR 9WNW	WY	0.03E	0.04
FMDM7	LAKE ST LOUIS 2SW	MO	0.03E	0.04
LNDN1	LINCOLN FIRE STA 6	NE	0.03E	0.04

LNEN1	LINCOLN FIRE STA 7	NE	0.03E	0.04
LINM7	LINNEUS	MO	0.03E	0.04
LNNM7	LINNEUS 3SE	MO	0.03	0.04
LIVM8	LIVINGSTON 5S	MT	0.03E	0.04
LUPN1	LOUP CITY, MID LOUP	NE	0.03	0.04
MALN1	MALCOLM	NE	0.03E	0.04
MDNN8	MANDAN 3W, HEART R	ND	0.03E	0.04
MESN8	MANDAN EXP STATION	ND	0.03E	0.04

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STATION				PERIOD
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MAPM7	MAPLEWOOD	MO	0.03E	0.04
MCJN1	MCCOOL JUNCTION	NE	0.03E	0.04
MLRN1	MILLARD 2NW GDDS	NE	0.03E	0.04
MHE	MITCHELL AIRPORT	SD	0.03	0.04
RNMS2	MT RUSHMORE NATL MEM	SD	0.03E	0.04
MYSM8	MYSTIC LAKE	MT	0.03E	0.04
NASM8	NASHUA #2	MT	0.03E	0.04
FPMM8	NASHUA, MISSOURI R	MT	0.03E	0.04
NEDC2	NEDERLAND 5NNW	CO	0.03E	0.04
NWCW4	NEWCASTLE	WY	0.03E	0.04
OHMN1	OMAHA	NE	0.03E	0.04
OMAN1	OMAHA STANDNG BEAR L	NE	0.03E	0.04
OTON1	OTOE	NE	0.03E	0.04
OTM	OTTUMWA	IA	0.03	0.04
PARN1	PARKS 17N	NE	0.03E	0.04
PTTM7	PATTONSBURG 2S	MO	0.03	0.04
PATM7	PATTONSBURG, GRAND R	MO	0.03E	0.04
PLTM7	PLATTSBURG	MO	0.03E	0.04
LPPM7	PLATTSBURG 2E	MO	0.03E	0.04
PKCW4	POCKET CREEK SNOTEL	WY	0.03E	0.04
POF	POPLAR BLUFF AIRPORT	MO	0.03	0.04
POGM8	PORT OF MORGAN	MT	0.03E	0.04
RABN1	RALSTON	NE	0.03E	0.04
RXE	REXBURG AIRPORT	ID	0.03E	0.04
SHER003	RUSHVILLE 13S	NE	0.03E	0.04
SRGN1	SARGENT	NE	0.03E	0.04
SAVM8	SAVAGE	MT	0.03E	0.04
SAVM7	SAVANNAH 1S	MO	0.03E	0.04
SDYM8	SIDNEY 1NE	MT	0.03E	0.04
SDY	SIDNEY-RICHLAND AP	MT	0.03E	0.04
EROS2	SIOUX FALLS 14NE	SD	0.03E	0.04
SFKW4	SOUTH FORK	WY	0.03E	0.04
WHEE006	SPALDING 6N	NE	0.03E	0.04
0517N8	ST ANTHONY 7NE	ND	0.03E	0.04
SODM7	ST JOE WHITHD (4)	MO	0.03E	0.04
SAJM7	ST JOSEPH	MO	0.03E	0.04
TGPM7	ST LOUIS 6SW	MO	0.03E	0.04
SJOM7	ST LOUIS WSFO	MO	0.03E	0.04
STOS2	ST ONGE 2S	SD	0.03E	0.04
STBM7	STANBERRY	MO	0.03E	0.04
SPHN1	STAPLEHURST 3WNW	NE	0.03E	0.04
SUNS2	SUNDAY GULCH	SD	0.03	0.04
TGSN8	TAGUS	ND	0.03E	0.04

TFRW4	TEN SLEEP 4NE	WY	0.03E	0.04
TLKS2	TIMBER LAKE	SD	0.03E	0.04
TWRW4	TOWER FALLS	WY	0.03E	0.04
TFW4	TOWER FALLS STATION	WY	0.03E	0.04
TRON8	TROTTERS 3SSE	ND	0.03E	0.04
TRTN8	TROTTERS, BEAVER CR	ND	0.03E	0.04
UION1	UNION, WEEPING WATER	NE	0.03E	0.04
UNVM7	UNIONVILLE	MO	0.03E	0.04
PTNW4	UPTON 14ENE	WY	0.03E	0.04
VLVN8	VELVA	ND	0.03E	0.04

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WALI4	WALLIN 1NW	IA	0.03E	0.04
WAPW4	WAPITI 1NE	WY	0.03E	0.04
WVRN1	WAVERLY	NE	0.03E	0.04
LSX	WELDON SPRINGS	MO	0.03	0.04
WNDM7	WINDSOR	MO	0.03E	0.04
WNSM7	WINDSOR #2	MO	0.03	0.04
YLAW4	YELLOWSTONE(MAMMOTH)	WY	0.03E	0.04
ABON1	ALBION 7W	NE	0.02E	0.02
SALS2	ALCESTER	SD	0.02E	0.02
ALSM8	ALDER 17S	MT	0.02E	0.02
ADRM8	ALDER 19S	MT	0.02E	0.02
AMNN8	ALMONT	ND	0.02E	0.02
ALZM8	ALZADA 1SSE	MT	0.02E	0.02
ANSN1	ANSELMO 2SE	NE	0.02E	0.02
ATHK1	ATCHISON	KS	0.02E	0.02
ATSK1	ATCHISON 1S	KS	0.02	0.02
ATCK1	ATCHISON, MISSOURI R	KS	0.02E	0.02
0134N8	BALDWIN 1W	ND	0.02E	0.02
BCHN8	BEACH 9SE	ND	0.02E	0.02
BEFS2	BELLE FOURCHE RES	SD	0.02E	0.02
BHKC2	BLACK HAWK 6SE	CO	0.02E	0.02
BTXW4	BLACK MOUNTAIN	WY	0.02E	0.02
LMBW4	BOLES SPRING	WY	0.02E	0.02
BRGC2	BRECKENRIDGE	CO	0.02E	0.02
BYNM7	BYNUMVILLE 1E	MO	0.02E	0.02
CAHM7	CALHOUN	MO	0.02E	0.02
CACS2	CAMP CROOK	SD	0.02	0.02
CAMS2	CAMP CROOK 1NW RAWS	SD	0.02E	0.02
CERN1	CERESCO 6SE, ROCK CR	NE	0.02E	0.02
WBMN1	CHADRON 3NE	NE	0.02E	0.02
CHDN1	CHADRON 3SW	NE	0.02E	0.02
CHRW4	CHRISTINA LAKE	WY	0.02E	0.02
CCLM8	CIRCLE 20N	MT	0.02E	0.02
CLDI4	CLARINDA	IA	0.02	0.02
CLXC2	CLIMAX	CO	0.02	0.02
OBAW4	CODY 12SE	WY	0.02E	0.02
VALW4	CODY 34SW	WY	0.02E	0.02
COII4	COIN	IA	0.02E	0.02
COKN1	COOK	NE	0.02E	0.02
CSBM7	COSBY 2W	MO	0.02E	0.02
CBYN8	CROSBY	ND	0.02E	0.02

DRDM7	DARDENNE PRAIRIE	MO	0.02E	0.02
DKEN8	DRAKE 8NE	ND	0.02E	0.02
EGLW4	EAGLE	WY	0.02E	0.02
ELKS2	ELK POINT 13NE	SD	0.02E	0.02
ELON1	ELLSWORTH	NE	0.02E	0.02
ELSN1	ELLSWORTH 15NNE	NE	0.02E	0.02
ELRN1	ELLSWORTH 24NNE	NE	0.02E	0.02
ELLN1	ELSMERE 9ENE	NE	0.02E	0.02
EMDN1	EMERALD 1W	NE	0.02E	0.02
ERLN1	EMERALD 2NW	NE	0.02E	0.02
COLR240	ESTES PARK 2NE	CO	0.02E	0.02
EXSM7	EXCELSIOR SPRINGS 4S	MO	0.02	0.02

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FAAS2	FAULKTON 6ESE	SD	0.02E	0.02
FSLM8	FISHTAIL 7W RAWS	MT	0.02E	0.02
FLTC2	FLATIRON RESERVOIR	CO	0.02E	0.02
FMTC2	FREMONT PASS	CO	0.02E	0.02
FRDM8	FRENCHMAN DAM	MT	0.02E	0.02
FRUS2	FRUITDALE 3NW	SD	0.02E	0.02
GNAN1	GENOA 2W	NE	0.02E	0.02
GEON1	GENOA, BEAVER CR	NE	0.02E	0.02
GTNC2	GEORGETOWN, CLEAR CR	CO	0.02E	0.02
GLCS2	GLENCROSS	SD	0.02E	0.02
MOPS2	GREEN RIDGE	MO	0.02E	0.02
GEEM7	GREEN RIDGE 3SW	MO	0.02	0.02
GWDI4	GRISWOLD	IA	0.02E	0.02
HALN1	HALLAM 2N	NE	0.02E	0.02
HRVM7	HARVESTER 2SW	MO	0.02	0.02
HTVM7	HARVESTER 2SW	MO	0.02E	0.02
GLUN8	HEART BUTTE DAM	ND	0.02	0.02
HBGM8	HEBGEN DAM	MT	0.02E	0.02
HBDM8	HEBGEN DAM	MT	0.02E	0.02
K87	HIAWATHA 5SSE	KS	0.02E	0.02
HOUC2	HOURLASS RESERVOIR	CO	0.02E	0.02
HYRW4	HYATT RANCH	WY	0.02E	0.02
IMOI4	IMOGENE 3N	IA	0.02E	0.02
IML	IMPERIAL	NE	0.02	0.02
ISBS2	ISABEL 14NNE	SD	0.02E	0.02
ITHN1	ITHACA, WAHOO CR	NE	0.02E	0.02
NEMA009	JOHNSON 2E	NE	0.02E	0.02
JUDN8	JUDSON 9SSE, HEART R	ND	0.02E	0.02
KSHC2	KENOSHA PASS	CO	0.02E	0.02
JUDS2	KEYSTONE, BATTLE CR	SD	0.02	0.02
KLLN8	KILLDEER	ND	0.02	0.02
KILN8	KILLDEER 8NW	ND	0.02E	0.02
KNGN1	KINGSLEY DAM	NE	0.02	0.02
LKWC2	LAKEWOOD 4NW	CO	0.02E	0.02
LMRN1	LAMAR 3SSE	NE	0.02E	0.02
HCMC2	LEADVILLE 8SW	CO	0.02E	0.02
LRRM8	LIMA RESERVOIR	MT	0.02E	0.02
LNHN1	LINCOLN FIRE STA 10	NE	0.02E	0.02
LNBN1	LINCOLN FIRE STA 3	NE	0.02E	0.02

LCNN1	LINCOLN, SALT CR	NE	0.02E	0.02
SHEM001	LITCHFIELD 4N	NE	0.02E	0.02
LDGS2	LODGEPOLE 10NW	SD	0.02E	0.02
LGPS2	LODGEPOLE 5SW	SD	0.02E	0.02
MDDN1	MADRID	NE	0.02E	0.02
MANN8	MANDAN, MISSOURI R	ND	0.02E	0.02
MKLN1	MASKELL, MISSOURI R	NE	0.02E	0.02
MASN1	MASON CITY	NE	0.02E	0.02
0853N8	MAX 8N	ND	0.02E	0.02
MCK	MCCOOK	NE	0.02	0.02
MCXN1	MCCOOK	NE	0.02E	0.02
MCON1	MCCOOK #2	NE	0.02E	0.02
MCKN1	MCCOOK, DRIFTWOOD CR	NE	0.02E	0.02
MKRN1	MCCOOK, REPUBLICAN R	NE	0.02E	0.02

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MEDN1	MEAD 6S	NE	0.02E	0.02
MTEW4	MEETEETSE	WY	0.02E	0.02
MNKN8	MENOKEN 2WNW	ND	0.02E	0.02
MERN1	MERRIMAN	NE	0.02E	0.02
MILM8	MILES CITY 1NW	MT	0.02E	0.02
MLS	MILES CITY AIRPORT	MT	0.02	0.02
MICM8	MILES CITY, TONGUE R	MT	0.02E	0.02
MJTW4	MORAN 5SW	WY	0.02E	0.02
MRAW4	MORAN 5WSW	WY	0.02E	0.02
NSHM8	NASHUA, MILK R	MT	0.02E	0.02
ODLN1	ODELL	NE	0.02E	0.02
OGLN1	OGALLALA	NE	0.02E	0.02
OVNN1	OMAHA 9NW	NE	0.02E	0.02
OHAN1	OMAHA, BIG PAPILLION	NE	0.02E	0.02
ORCN1	ORCHARD 1NW	NE	0.02E	0.02
OTOE004	PALMYRA 2S	NE	0.02E	0.02
PXTN1	PAXTON KORTY POWER	NE	0.02E	0.02
PHLN1	PHILLIPS 4SE	NE	0.02E	0.02
BRW4	PINEDALE 14SE	WY	0.02E	0.02
RESC2	RABBIT EARS	CO	0.02E	0.02
COJF140	RALSTON BUTTES 1NNW	CO	0.02E	0.02
GDNC2	RALSTON RESERVOIR	CO	0.02E	0.02
RNDC2	RAND	CO	0.02E	0.02
RANC2	RAND AMRAD	CO	0.02E	0.02
RANI4	RANDOLPH	IA	0.02E	0.02
RDPI4	RANDOLPH 1W, W NISH	IA	0.02E	0.02
RAVN1	RAVENNA	NE	0.02E	0.02
RVNN1	RAVENNA, SO LOUP R	NE	0.02E	0.02
RWCN1	RED WILLOW (BLO DAM)	NE	0.02E	0.02
RGUS2	RENO GULCH	SD	0.02E	0.02
RHAN8	RHAME 8S	ND	0.02E	0.02
RICM7	RICHMOND, CROOKED R	MO	0.02E	0.02
RIDM8	RIDGEWAY 1S	MT	0.02E	0.02
RSO1	ROSCOE, SO PLATTE R	NE	0.02	0.02
SHLM7	SHELL CITY	MO	0.02E	0.02
SEWN1	SEWARD	NE	0.02E	0.02
SIDI4	SIDNEY	IA	0.02	0.02

SBLW4	SODA BUTTE CREEK	WY	0.02E	0.02
SSMM8	SOUTH SAWMILL GDDS	MT	0.02	0.02
SPGN1	SPRAGUE 3W	NE	0.02E	0.02
STCM7	ST CHARLES 7SSW	MO	0.02E	0.02
SJPM7	ST JOSEPH 4SE	MO	0.02E	0.02
WLN14	STANTON 4N	IA	0.02E	0.02
BWSW4	STATE LINE WY-SD	WY	0.02E	0.02
COLR404	STOVE PRAIRIE 3SSE	CO	0.02E	0.02
SNZM7	SUMNER 2SW, GRAND R	MO	0.02E	0.02
SMNM7	SUMNER 3SW	MO	0.02E	0.02
SDNW4	SUNDANCE	WY	0.02E	0.02
BRLW4	SUNDANCE 12N	WY	0.02	0.02
SDCW4	SUNDANCE 8NNW	WY	0.02E	0.02
TSTM8	TOSTON 5NW AGRIMET	MT	0.02	0.02
TOSM8	TOSTON, MISSOURI R	MT	0.02E	0.02
TYRN1	TRYON 15NW	NE	0.02E	0.02

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UNDN8	UNDERWOOD	ND	0.02	0.02
HRSS2	VALE 3NE, HORSE CR	SD	0.02E	0.02
VNRM8	VAN NORMAN 4NE	MT	0.02E	0.02
VIRS2	VIRGIL (AMRAD)	SD	0.02E	0.02
WLLN1	WALLACE 2W	NE	0.02E	0.02
WPRW4	WAPITI 1W	WY	0.02E	0.02
WRRW4	WARREN PEAK	WY	0.02E	0.02
WEPN1	WEeping WATER	NE	0.02E	0.02
WDSM7	WELDON SPRINGS 1N	MO	0.02E	0.02
WEY	WEST YELLOWSTONE	MT	0.02E	0.02
MDSM8	WEST YELLOWSTONE 2E	MT	0.02E	0.02
WTRM8	WHITEWATER	MT	0.02E	0.02
WLDN8	WILDROSE 3NW	ND	0.02E	0.02
WEFN8	WILLISTON EXP FARM	ND	0.02E	0.02
ISN	WILLISTON INTL APT	ND	0.02	0.02
LMCN8	WILLISTON, LTL MUDDY	ND	0.02E	0.02
WLTN8	WILLISTON, MISSOURI R	ND	0.02E	0.02
WILS2	WILSON CREEK CAMP	SD	0.02	0.02
YLWW4	YELLOWSTONE (MAMMOTH)	WY	0.02E	0.02
ZIRC2	ZIRKEL	CO	0.02E	0.02
AGYM7	AGENCY 4NE, PLATTE R	MO	0.01	0.01
ALBM8	ALBION 1N	MT	0.01E	0.01
ALDN1	ALDA 1SW, WOOD R	NE	0.01E	0.01
ALEN8	ALEXANDER 4NNW	ND	0.01E	0.01
ALTN8	ALMONT, BIG MUDDY CR	ND	0.01E	0.01
ANGS2	ANGOSTURA DAM BELOW	SD	0.01	0.01
CUST014	ANSELMO 12WSW	NE	0.01E	0.01
ARHN1	ARTHUR	NE	0.01E	0.01
ASBN1	ASHBY 20SSW	NE	0.01E	0.01
ATWK1	ATWOOD 8SSE	KS	0.01E	0.01
ATWC2	ATWOOD, SO PLATTE R	CO	0.01	0.01
NFSM8	AUGUSTA 25NW	MT	0.01E	0.01
AVOI4	AVOCA	IA	0.01E	0.01
BDAN1	BARADA 3SW	NE	0.01E	0.01
BDDN1	BARTLEY 4SSW	NE	0.01E	0.01

BSCW4	BASE CAMP, MORAN 9NE	WY	0.01E	0.01
BATS2	BATTLE MTN NFS	SD	0.01E	0.01
BNAM7	BEAN LAKE	MO	0.01E	0.01
BCDC2	BEAR CREEK DAM	CO	0.01E	0.01
BLFN8	BELFIELD 1SW	ND	0.01E	0.01
BISN8	BISMARCK 7N	ND	0.01E	0.01
BLRK1	BLUE RAPIDS	KS	0.01E	0.01
BRPK1	BLUE RAPIDS	KS	0.01	0.01
BREC2	BRECKENRIDGE 3N	CO	0.01E	0.01
BRMK1	BREMEN 1E	KS	0.01	0.01
BKMC2	BUCKHORN MOUNTAIN 1E	CO	0.01E	0.01
BUCM7	BUCKNER	MO	0.01E	0.01
COCF25	BUENA VISTA 4WNW	CO	0.01E	0.01
CDYW4	BUFFALO BILL DAM	WY	0.01E	0.01
BLBW4	BUFFALO BILL DAM	WY	0.01E	0.01
BUFC2	BUFFALO PARK	CO	0.01E	0.01
BTM8	BURNT CREEK RAWLS	MT	0.01E	0.01
BTEN8	BUTTE 5SE	ND	0.01E	0.01

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CPPM7	CAPLINGER MILLS	MO	0.01E	0.01
CPMM7	CAPLINGER MILLS 1N	MO	0.01E	0.01
CMZM7	CAPLINGER MILLS GDDS	MO	0.01E	0.01
CANN8	CARSON	ND	0.01E	0.01
CRSN8	CARSON, ANTELOPE CR	ND	0.01E	0.01
CCSW4	CASTLE CREEK SNOTEL	WY	0.01E	0.01
CEDN1	CEDAR RAPIDS	NE	0.01E	0.01
CDR	CHADRON	NE	0.01	0.01
CHYS2	CHERRY CREEK GDDS	SD	0.01E	0.01
CSTM7	CHESTERFIELD	MO	0.01E	0.01
CCL	CIRCLE 17NNW	MT	0.01E	0.01
CLNK1	CLAYTON, PRAIRIE DOG	KS	0.01E	0.01
CLFM7	CLIFTON CITY	MO	0.01E	0.01
COOW4	CODY 5SE	WY	0.01E	0.01
CHNM8	COHAGEN	MT	0.01E	0.01
CNTM8	CONTENT 3SSE	MT	0.01E	0.01
CORM7	CORNING	MO	0.01E	0.01
CTTS2	COTTONWOOD, SF BAD R	SD	0.01	0.01
OSKN1	CRESCENT LAKE REFUGE	NE	0.01E	0.01
CULM8	CULBERTSON	MT	0.01E	0.01
CULN1	CULBERTSON	NE	0.01E	0.01
CUTS2	CUSTER (AMRAD)	SD	0.01E	0.01
CRAS2	CUSTER 4N	SD	0.01E	0.01
DENN1	DENTON 4E	NE	0.01E	0.01
0759N8	DICKINSON 2NW	ND	0.01E	0.01
DIK	DICKINSON AIRPORT	ND	0.01	0.01
DNDN8	DICKINSON DAM	ND	0.01E	0.01
DCKN8	DICKINSON EXP STN	ND	0.01	0.01
DRHN8	DICKINSON RANCH HQ	ND	0.01E	0.01
SODC2	DILLON CO	CO	0.01E	0.01
DNCN8	DUNN CENTER 1E	ND	0.01E	0.01
EGTM7	EDGERTON	MO	0.01E	0.01
EFFK1	EFFINGHAM	KS	0.01E	0.01

HAKM8	EKALAKA 28SSE	MT	0.01E	0.01
ELSM7	ELDORADO SPRINGS 12E	MO	0.01E	0.01
EGNN8	ELGIN	ND	0.01E	0.01
ELMW4	ELK MOUNTAIN	WY	0.01E	0.01
ELMM7	ELM (POWELL GARDENS)	MO	0.01E	0.01
EPPN8	EPPING	ND	0.01E	0.01
EWSN1	EWING, S ELKHORN	NE	0.01E	0.01
FAIN8	FAIRFIELD	ND	0.01E	0.01
FAIS2	FAITH	SD	0.01E	0.01
FTHS2	FAITH 14NW, MOREAU R	SD	0.01	0.01
D07	FAITH AIRPORT	SD	0.01	0.01
FNB	FALLS CITY 2NE	NE	0.01E	0.01
FSTM8	FISHTAIL	MT	0.01E	0.01
FSTK1	FOSTORIA 7NW	KS	0.01E	0.01
FRZC2	FRASER	CO	0.01E	0.01
GARN8	GARRISON DAM	ND	0.01E	0.01
AGSM8	GIBSON DAM	MT	0.01E	0.01
GDMM8	GIBSON LAKE	MT	0.01E	0.01
GLCC2	GLEN COMFORT	CO	0.01E	0.01
GCMC2	GLEN COMFORT	CO	0.01E	0.01

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GLNN8	GLEN ULLIN	ND	0.01E	0.01
GOFK1	GOFF 3WSW	KS	0.01E	0.01
COJF267	GOLDEN 9WNW	CO	0.01E	0.01
GRWN1	GRAND ISLAND	NE	0.01E	0.01
GRIN1	GRAND ISLAND 5SE	NE	0.01E	0.01
GRI	GRAND ISLAND AIRPORT	NE	0.01	0.01
GIDN1	GRAND ISLAND, WOOD R	NE	0.01E	0.01
GDLC2	GRAND LAKE 6SSW	CO	0.01E	0.01
PERK018	GRANT 8WSW	NE	0.01E	0.01
GSSM8	GRASS RANGE	MT	0.01E	0.01
FWFM8	GRASS RANGE 19SSE	MT	0.01E	0.01
GRBN8	GRASSY BUTTE 2ENE	ND	0.01E	0.01
0063N8	GRASSY BUTTE 9SE	ND	0.01E	0.01
GRNN1	GREENWOOD, SALT CR	NE	0.01E	0.01
GREN8	GRENORA	ND	0.01E	0.01
HLIN8	HALLIDAY	ND	0.01E	0.01
HBGI4	HAMBURG #2	IA	0.01E	0.01
HMBI4	HAMBURG, NISHNABOTNA	IA	0.01	0.01
HANK1	HANOVER 4S	KS	0.01E	0.01
HRBM8	HARB	MT	0.01E	0.01
HSI	HASTINGS	NE	0.01	0.01
GID	HASTINGS 4N	NE	0.01E	0.01
HSTN1	HASTINGS 4N	NE	0.01E	0.01
TCHN8	HEART R ABV TSCHIDA	ND	0.01E	0.01
HEBN8	HEBRON	ND	0.01E	0.01
HMGN1	HEMINGFORD 10SW	NE	0.01E	0.01
LINC004	HERSHEY 6NW	NE	0.01E	0.01
HEI	HETTINGER	ND	0.01	0.01
HETN8	HETTINGER EXP STN	ND	0.01E	0.01
HLSK1	HILLSDALE 3SW	KS	0.01	0.01
INSM8	HINSDALE 2E	MT	0.01E	0.01

HINM8	HINSDALE 4SW	MT	0.01E	0.01
HOBM8	HOBSON	MT	0.01E	0.01
HLTM7	HOLT 3E	MO	0.01E	0.01
COPH33	HOLYOKE 13SE	CO	0.01E	0.01
HRTK1	HORTON	KS	0.01E	0.01
HYTW4	HOYT PEAK	WY	0.01E	0.01
HULW4	HULETT	WY	0.01E	0.01
HUMN1	HUMPHREY	NE	0.01E	0.01
HYAN1	HYANNIS	NE	0.01E	0.01
COCC17	IDAHO SPRINGS 1ENE	CO	0.01E	0.01
IRHW4	IRISH ROCK	WY	0.01E	0.01
IRVN1	IRVINGTON	NE	0.01E	0.01
JELW4	JELM 2S	WY	0.01E	0.01
JERM7	JERICO SPRINGS 3S	MO	0.01E	0.01
JDWM8	JORDAN 23ENE	MT	0.01E	0.01
JRDM8	JORDAN 25N	MT	0.01E	0.01
ADAM002	JUNIATA 6SSW	NE	0.01E	0.01
KCEW4	KAYCEE	WY	0.01E	0.01
KNEN8	KEENE 3S	ND	0.01E	0.01
KGLM7	KINGSVILLE	MO	0.01E	0.01
KRLS2	KIRLEY 6N	SD	0.01E	0.01
KWNK1	KIRWIN 1S	KS	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
 DATE=Jun 22, 2011 - 14:02:22

0

STATION			PERIOD
ID	DESCRIPTION	STATE	SUM
-----	-----	-----	-----
KRWK1	KIRWIN DAM	KS	0.01 0.01
KITC2	KITTREDGE GDDS	CO	0.01E 0.01
LSTM7	LAKE ST LOUIS	MO	0.01E 0.01
COJF179	LAKEWOOD 2S	CO	0.01E 0.01
LAMM7	LAMAR	MO	0.01E 0.01
LRRM7	LAMAR	MO	0.01E 0.01
LARM7	LAMAR 12NE	MO	0.01E 0.01
LMRW4	LAMAR RANGER STATION	WY	0.01E 0.01
LANW4	LANDER, POPO AGIE R	WY	0.01E 0.01
LRKN8	LARK 10N, HEART R	ND	0.01E 0.01
RBYM8	LAURIN 2SW	MT	0.01E 0.01
IDOC2	LAWSON, CLEAR CREEK	CO	0.01E 0.01
STLC2	LEROY 9WSW	CO	0.01E 0.01
LLLK1	LILLIS	KS	0.01E 0.01
LUSN1	LINCOLN 3S, SALT C	NE	0.01 0.01
LNAN1	LINCOLN FIRE STA 1	NE	0.01E 0.01
LNFN1	LINCOLN FIRE STA 8	NE	0.01E 0.01
LICN1	LINCOLN, LTL SALT CR	NE	0.01 0.01
LNSM7	LINNEUS, LOCUST CR	MO	0.01 0.01
LNTN8	LINTON	ND	0.01E 0.01
LVAM7	LIVONIA	MO	0.01E 0.01
LVZM7	LIVONIA, CHARITON R	MO	0.01 0.01
LSHI4	LOESS HILLS RAW	IA	0.01E 0.01
LDLK1	LUDELL, BEAVER CR	KS	0.01E 0.01
QADW4	MAMMOTH 25WSW	WY	0.01E 0.01
MREN8	MANDAREE, BEAR DEN CR	ND	0.01E 0.01
MNHK1	MANHATTAN 6S	KS	0.01E 0.01
MHK	MANHATTAN MUNICPL AP	KS	0.01 0.01
MNGN8	MANNING, KNIFE R	ND	0.01 0.01

MRTS2	MARTIN	SD	0.01E	0.01
COLR253	MASONVILLE 8NW	CO	0.01E	0.01
MAXN8	MAX	ND	0.01E	0.01
MCGN8	MCGREGOR	ND	0.01E	0.01
MDAN8	MEDORA, LTL MISSOURI	ND	0.01E	0.01
MERC2	MERINO 7WNW	CO	0.01E	0.01
CUST021	MERNA 11W	NE	0.01E	0.01
MEXM7	MEXICO	MO	0.01E	0.01
MDDM7	MIDDLETOWN	MO	0.01E	0.01
MCCM8	MILES CITY RAWS	MT	0.01E	0.01
MMLN1	MILLER	NE	0.01E	0.01
HPWS2	MISSION RIDGE 3NW	SD	0.01E	0.01
MLI	MOLINE	IL	0.01	0.01
YMJ	MOOSE JAW	SK	0.01E	0.01
MOSC2	MORRISON	CO	0.01E	0.01
MRRC2	MORRISON, BEAR CREEK	CO	0.01E	0.01
MTNM8	MOULTON RESERVOIR	MT	0.01E	0.01
SQUM7	MOUND CITY, SQUAW CR	MO	0.01E	0.01
MLNN1	MULLEN	NE	0.01E	0.01
MHN	MULLEN	NE	0.01E	0.01
MLSN1	MULLEN 15S	NE	0.01E	0.01
COCF10	NATHROP 5SSW	CO	0.01E	0.01
NEBN1	NEBRASKA CITY	NE	0.01E	0.01
NCYN1	NEBRASKA CITY 2NW	NE	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1

- 03/20/07)

USER=MBRFC

DATE=Jun 22, 2011 - 14:02:22

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0STATION

ID	DESCRIPTION	STATE	06/22	PERIOD SUM
-----	-----	-----	-----	-----
NLHN1	NELIGH	NE	0.01E	0.01
NWEN8	NEW ENGLAND	ND	0.01E	0.01
HRAN8	NEW HRADEC, GREEN R	ND	0.01E	0.01
ECS	NEWCASTLE 5NW	WY	0.01E	0.01
NWLS2	NEWELL	SD	0.01E	0.01
NGRN1	NEWMAN GROVE	NE	0.01E	0.01
NBRN1	NIOBRARA 6WSW	NE	0.01E	0.01
NRBI4	NORTHBORO	IA	0.01E	0.01
OCNN1	OCONTO	NE	0.01E	0.01
MOLF1	ODESSA 6SSE	MO	0.01E	0.01
FOFW4	OLD FAITHFUL	WY	0.01E	0.01
OLYC2	OLYMPUS DAM	CO	0.01E	0.01
OMCN1	OMAHA 6NW	NE	0.01E	0.01
OSGW4	OSAGE	WY	0.01E	0.01
OSAK1	OSAWATOMIE	KS	0.01E	0.01
OSMK1	OSAWATOMIE 1NW	KS	0.01E	0.01
OTTM7	OTTERVILLE, LAMINE R	MO	0.01	0.01
OWLW4	OWL CREEK	WY	0.01E	0.01
PCFM7	PACIFIC	MO	0.01	0.01
PACM7	PACIFIC 1NNW	MO	0.01E	0.01
OTOE002	PALMYRA 7SSE	NE	0.01E	0.01
PAOK1	PAOLA	KS	0.01E	0.01
PAXN1	PAXTON	NE	0.01E	0.01
P05	PHILIP 3E	SD	0.01E	0.01
PHP	PHILLIP	SD	0.01	0.01
PHLS2	PHILLIP 1S	SD	0.01E	0.01
HAFW4	PINEDALE	WY	0.01E	0.01

PSGI4	PISGAH, SOLDIER R	IA	0.01E	0.01
PVRN1	PLAINVIEW RANCH	NE	0.01E	0.01
CHCS2	PLAINVIEW, CHERRY CR	SD	0.01E	0.01
PLNS2	PLAINVIEW,CHEYENNE R	SD	0.01E	0.01
PLZN8	PLAZA 10S	ND	0.01E	0.01
PHLM7	PLEASANT HILL	MO	0.01E	0.01
PLSM7	PLEASANT HILL 1E	MO	0.01E	0.01
PLHM7	PLEASANT HILL MBRFC	MO	0.01	0.01
PLSM8	POLARIS 4N	MT	0.01E	0.01
PRIM7	PRAIRIE HILL 2WNW	MO	0.01	0.01
PRWC2	PREWITT RESERVOIR	CO	0.01E	0.01
RLHN8	RALEIGH, CANNONBALL	ND	0.01E	0.01
RLGN8	RALEIGH, CEDAR CR	ND	0.01E	0.01
RYMN1	RAYMOND 2NE	NE	0.01E	0.01
RAYM8	RAYMOND BORDER STA	MT	0.01E	0.01
RLKC2	RED FEATHR LAKES 2SE	CO	0.01E	0.01
REDM8	RED LODGE 6SSW	MT	0.01E	0.01
RDTN8	RICHARDTON ABBEY	ND	0.01E	0.01
RICN8	RICHARDTON, HEART R	ND	0.01E	0.01
RIVN8	RIVERDALE	ND	0.01E	0.01
ALRM8	RUBY DAM	MT	0.01E	0.01
RULN1	RULO	NE	0.01E	0.01
RUON1	RULO 2W	NE	0.01E	0.01
MOFSA007	RUSH HILL 3S	MO	0.01E	0.01
RUTC2	RUSTIC 9WSW	CO	0.01E	0.01
SAOM8	SACO 1NNW	MT	0.01E	0.01

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ID	DESCRIPTION	STATE	06/22	PERIOD SUM
SACM8	SACO 7NE, MILK R	MT	0.01	0.01
SDRW4	SAND LAKE RESERVOIR	WY	0.01E	0.01
SAWW4	SAWMILL PARK RAWS	WY	0.01	0.01
SCZM7	SHELL CITY, OSAGE R	MO	0.01E	0.01
0879N8	SELZ 2SE	ND	0.01E	0.01
SHIN8	SHIELDS	ND	0.01E	0.01
SBTN1	SHUBERT 2SW	NE	0.01E	0.01
SKCM8	SOUTH KIRBY RAWS	MT	0.01E	0.01
SOWN1	SOWDERS RANCH	NE	0.01E	0.01
SPDM8	SPRINGDALE	MT	0.01E	0.01
SOFM7	ST JOE LNDFIL (6)	MO	0.01E	0.01
SLBN1	ST LIBORY	NE	0.01E	0.01
SUS	ST LOUIS (SPIRIT AP)	MO	0.01	0.01
SLDM7	ST LOUIS SOULARD	MO	0.01E	0.01
SMIM8	ST MARIE	MT	0.01E	0.01
SMIN1	ST MICHAEL, S LOUP R	NE	0.01E	0.01
STAN1	STAPLETON 5W	NE	0.01E	0.01
STRC2	STERLING	CO	0.01E	0.01
JOHN005	STERLING 3ESE	NE	0.01E	0.01
STEC2	STERLING 5NW AMRAD	CO	0.01E	0.01
0124N8	STERLING 6SE	ND	0.01E	0.01
SETM7	STET 1S	MO	0.01E	0.01
LINC036	SUTHERLAND 1N	NE	0.01E	0.01
SWLM8	SWAN LAKE	MT	0.01E	0.01
TABM8	TABLE MOUNTAIN	MT	0.01E	0.01

TLRN1	TAYLOR 12NE	NE	0.01E	0.01
TLRN8	TAYLOR 7NNW	ND	0.01E	0.01
TION8	TIOGA 1E	ND	0.01E	0.01
TRUW4	TROUT CREEK	WY	0.01E	0.01
TRNI4	TURIN 4SW, M-H DITCH	IA	0.01E	0.01
TURI4	TURIN, LTL SIOUX R	IA	0.01E	0.01
TULN8	TURTLE LAKE	ND	0.01E	0.01
TURN8	TURTLE LAKE 4N	ND	0.01E	0.01
USTS2	USTA 8WNW	SD	0.01E	0.01
HUTM8	UTICA 11WSW	MT	0.01E	0.01
CHER010	VALENTINE 19SSW	NE	0.01E	0.01
VLYW4	VALLEY, SF SHOSHONE	WY	0.01E	0.01
PERK005	VENANGO	NE	0.01E	0.01
VDLN1	VERDEL 6SSE	NE	0.01E	0.01
VRDN1	VERDEL, NIOBRARA R	NE	0.01E	0.01
VERN1	VERDEL, PONCA CR	NE	0.01E	0.01
VERS2	VERMILLION 3N	SD	0.01E	0.01
WRRM7	WARRENSBURG 4NW	MO	0.01	0.01
WASN8	WASHBURN	ND	0.01E	0.01
WSBN8	WASHBURN, MISSOURI R	ND	0.01E	0.01
WSHN8	WASHBURN, TURTLE CR	ND	0.01E	0.01
WTAS2	WASTA	SD	0.01E	0.01
WCYN8	WATFORD CITY 1S	ND	0.01E	0.01
MOSL3	WEBSTER GROVES 1ESE	MO	0.01E	0.01
WLFN1	WELLFLEET	NE	0.01E	0.01
WSYM8	WEST YELLOWSTONE	MT	0.01E	0.01
WYS	WEST YELLOWSTONE	MT	0.01E	0.01
WETK1	WETMORE	KS	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
 DATE=Jun 22, 2011 - 14:02:22

ID	DESCRIPTION	STATE	06/22	PERIOD SUM
WPKW4	WHISKEY PARK	WY	0.01E	0.01
WLDM8	WILDROSE 3NW	MT	0.01E	0.01
WIDM7	WILDWOOD	MO	0.01E	0.01
WLSN1	WILSONVILLE	NE	0.01E	0.01
WTPC2	WINTER PARK	CO	0.01E	0.01
WDLK1	WOODLAWN 2W	KS	0.01E	0.01
WRTW4	WRIGHT	WY	0.01E	0.01
WGTW4	WRIGHT 12W	WY	0.01E	0.01
WRHW4	WRIGHT 16NW	WY	0.01E	0.01
WYGM8	YELLOWSTONE GATEWAY	MT	0.01E	0.01

>>>>>>> STOP

0 CPU TIME USED = 0 MINUTES, 0 SECONDS

0 CLOCK TIME USED = 0 MINUTES, 1 SECONDS

[REDACTED] NWO

From: [REDACTED] NWK
Sent: Wednesday, June 22, 2011 9:28 AM
Subject: 22 June 2011 Boat Report 11173
Attachments: BoatReportDaily11173.pdf; Daily Gage 0622.pdf

Attached is the Boat Report for June 22, 2011 #11173.

Thank you,

[REDACTED]
US Army Corps of Engineers
MO River Area Office
Napoleon, MO 64074
[REDACTED]

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www.facebook.com/MORiverNavigation

MISSOURI RIVER BARGE TRAFFIC

REPORT#: 11173							DATE: 22 JUNE 2011
BOAT NAME	RIVER MILE	UP DN	DEST	LOADS	EMPTY	DRAFT	REMARKS
JEFFERSON CITY RIVER TERMINAL							
ALLISON MARIE	228	DN	186	2	4		dredge Sandy K, crane barge and 4 material barges in tow
LESLIE ANN	149	UP	186	1			dredge Ray Marie
JAMIE LEIGH	4	DN	0		3		
TARKIO	143						Stand by
HALLE KATE	143						Stand by
MARGE I	143						Working, tending to dredge Kathy Lee
MAGNOLIA MARINE							
JENNIE DEHMER							Off MOR
LINDA TAYLOR							Off MOR
LESLIE B							Off MOR
MR LAMPTON							Off MOR
RIVER MARINE ENTERPRISES LLC							
MARY LYNN							Off MOR
HERMANN SAND & GRAVEL							
KATHRYN ANN	32	UP	97		1		
MEL SUE	97						Stand By
W. A. ELLIS CONSTRUCTION							
DAISY BELL	221	UP DN	219				Placing rock in area of rm 221
JOHANNE	219	UP DN	221				Loading rock at rm 219
WESTERN CONTRACTING							
EXPEDITION	661						Stand by
CAPT. JOE	661						Stand by
CORPS OF ENGINEERS							
BRANDY FITZHUGH	627						Stand by
MISSOURI	627						Stand by
JUMBO	104.5						Stand by
STEPHENSON	104.5						Stand by
STEPHENSON II	104.5						Stand by
CLEM MEYER II							Off MOR
COAST GUARD							
CHEYENNE							Off MOR
GASCONADE							Homeport

RIVER MILES AND STAGES FOR HIGH WATER LEVEE CONCERNS

River Mile	Station	Stage in Feet
278.2 - 278.3	Waverly	21
298.3 - 298.6	Waverly	21
298.3 - 300.2	Waverly	21
302.2 - 302.5	Waverly	21
367.0 - 367.5	Kansas City	17
418.2 - 428.0	Atchison	20
428.0 - 437.3	St. Joseph	22
441.7 - 456.5	St Joseph	17

River Mile	Station	Stage in Feet
465.5 - 470.5	St Joseph	19
473.5 - 476.0	St Joseph	19
476.0 - 482.5	St Joseph	19
492.5 - 493.6	Rulo	20
493.6 - 494.0	Rulo	20
498.9 - 499.0	Rulo	20
501.9 - 502.0	Rulo	20
506.5 - 507.1	Rulo	20

Kansas City District, Corps of Engineers Water Management Section RADIO ROOM DAILY GAGES

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME GMT	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)
Missouri River							
Sioux City	732.3	1057.0	30	22JUN2011 12:00	34.19	0.04	0.14
Omaha	615.9	948.2	29	22JUN2011 11:00	34.68	-0.03	0.34
Nebraska City	562.6	905.4	18	22JUN2011 12:00	27.79	0.08	1.02
Rulo	498.0	837.2	17	22JUN2011 11:30	26.59	0.10	0.54
St. Joseph	448.2	788.2	17	22JUN2011 11:30	25.45	0.20	0.90
Kansas City	366.1	706.4	32	22JUN2011 11:30	26.46	0.01	0.17
Napoleon	328.7	680.2	17	22JUN2011 11:30	21.93	0.05	0.04
Waverly	293.4	646.0	20	22JUN2011 11:30	24.02	-0.70	-0.78
Glasgow	226.3	586.1	25	22JUN2011 11:30	26.01	-0.10	-0.05
Boonville	197.1	565.4	21	22JUN2011 11:30	21.51	-0.16	-0.26
Jefferson City	143.9	520.1	23	22JUN2011 12:00	21.60	-0.09	-0.18
Hermann	97.9	481.6	21	22JUN2011 11:30	21.70	-0.14	0.20
St. Charles	28.2	413.6	25	22JUN2011 12:00	24.92	0.04	0.25
St. Louis-Missi R.	0.0	379.9	30	22JUN2011 12:00	32.96	-0.10	-0.44
Gasconade River							
Jerome			15	22JUN2011 11:45	3.18	-0.06	-0.10
Rich Fountain			20	22JUN2011 12:00	4.46	-0.02	-0.01
Osage River							
St. Thomas			23	22JUN2011 11:45	8.75	-0.86	-2.73
Grand River							
Chillicothe	60.1	658.7	24	22JUN2011 11:45	11.92	1.11	6.07
Sumner	36.0	631.2	26	22JUN2011 11:45	15.20	2.24	4.01

NWO

From: Hofmann, Anthony J COL NWK
Sent: Wednesday, June 22, 2011 8:57 AM
To: Farhat, Jody S NWD02
Subject: Missouri

Jody-

I had a question from Missouri leadership after yesterday's decision on Gavin's releases.
Question: we had approximately 1 million AF of storage in the system before the precip in
last 72 hrs.

How much is left now?

Any help is appreciated.

Colonel Tony Hofmann, PMP
Commander, Kansas City District
U.S. Army Corps of Engineers
B.B. 816-807-0129

[REDACTED] NWO

From: [REDACTED] NWD02
Sent: Wednesday, June 22, 2011 8:39 AM
To: [REDACTED] NWD02; [REDACTED] MAJ NWD; [REDACTED] NWD;
[REDACTED] NWO
Cc: Farhat, Jody S NWD02
Subject: RE: (UNCLASSIFIED)
Attachments: NWD Missouri Basin Update - 062211.pptx

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Stages

22 June 2011



US Army Corps of Engineers
BUILDING STRONG®

Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	16	18.9	150 kcfs 20.6	June 19.	
B	13	19.7	150 kcfs 18.7	June 7	
C	20	25.1	150 kcfs n/a	June 14	
D	30	34.2	170 kcfs 35	June 15	44.28 (1952)
E	35	39.0	175 kcfs 40	June 15	43.5 (1943)
F	26	32.3	175 kcfs 32	June 15	33.5 (1952)
G	29	34.7	175 kcfs 34	June 16	40.2 (1952)
H	18	27.8	200 kcfs 27	June 16	27.19 (1993)
I	33	44.5	205 kcfs 43	June 16	44.3 (1993)
J	17	26.6	210 kcfs 25.5	June 17	26.63 (2010)
K	17	25.5	215 kcfs 27	June 17	32.07 (1993)
L	22	28.0	215 kcfs 30	June 17	31.63 (1993)
M	20	23.4	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

22 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages		Projected Date **	Record Stage (Year)
N	Kansas City	32	26.5	220 kcfs 30	350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.2	220 kcfs 28	350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	na	220 kcfs 25	350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	24.9	230 kcfs 27	370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	23.1	235 kcfs 26	370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	na	250 kcfs 32	410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	22.1	260 kcfs 27	420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.6	260 kcfs 27	430 kcfs 35	June 19	38.3 (1993)
V	Chamais	17	17.9	290 kcfs 24	450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	23.9	300 kcfs 30	470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.7	300 kcfs 27	470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	18.4	300 kcfs 23	470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.8	300 kcfs 28	470 kcfs 37	June 20	40.04 (1993)

[REDACTED] NWO

From: [REDACTED] NWO
Sent: Wednesday, June 22, 2011 8:20 AM
To: DLL-CENWO-OD-GA; [REDACTED] NWO; [REDACTED] NWD02; [REDACTED] HQ02;
[REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO;
[REDACTED] @ POD; [REDACTED] NWO
Subject: Garrison's Staff Notes (UNCLASSIFIED)
Attachments: 6-22 Garrison Flood Fight Daily Staff Notes.docx; Main Stem Regulation Forecast - Three-Week (6-21).mht; Phone Book.xlsx

Classification: UNCLASSIFIED

Caveats: FOUO

Attached are today's staff notes, the current three week forecast, and an updated cell phone list. Those folks who are designated as leads this week are highlighted in yellow. Our 3-week forecast has improved a bit again. Elevations and inflows at Fort Peck and Garrison finally appear to be headed in the right direction. Additionally, our current 10 day forecast shows only three days with a chance of precipitation! Another ray of hope.

Please keep our neighbors and coworkers from Minot in your thoughts and prayers...

[REDACTED] P.E.
Operations Project Manager
Garrison Project

Classification: UNCLASSIFIED

Caveats: FOUO

**Garrison Flood Fight
Daily Staff Notes
Wednesday, 22 June 2011**

Forecast/Flows/River Monitoring:

- Lake Sakakawea:
 - Current Reservoir Elevation: 1854.49. Yesterday's elevation: 1854.30
 - Current Tail water Elevation 1684.59. Yesterday's elevation 1684.57
 - Stilling Basin (a.k.a. Spillway Pond) elevation: 1686.4
 - Estimated Inflows today: cfs. Inflows yesterday: 188,800 cfs.
 - Releases: 150,000 cfs.
 - Spillway gates 1 through 28 are open 2 feet.
 - Day water release distribution: Power Plant - 31,000 cfs, Regulating Tunnels - 58,000 cfs, Spillway - 61,000 cfs.
 - Night water release distribution: Power Plant - 16,000 cfs, Regulating Tunnels - 73,000 cfs, Spillway - 61,000 cfs.
 - We are shifting our releases between the regulatory tunnels and the power plant to provide load control for WAPA. Scheduled load and water release changes are being made at 0800 and 2000 hours.
- Fort Peck releases at 60,000 cfs today.
- Missouri River Elevations:
 - Bismarck gage: Currently 18.99 feet. Yesterdays gage was 18.92 feet. Protection measures in Bismarck are to 21.6 feet with a forecasted crest of 20.6 feet.
 - Williston gage: The river gage as of yesterday afternoon was 30.61 feet. Gage was 30.53 yesterday morning. Previous record stage: 28.0 feet.
- Current Snowpack: Snow pack data not updated for today...
 - Ft Peck - crested at 141% of normal peak; currently 58% of the normal peak remains.
 - Garrison - crested at 136% of peak; currently 63% of the normal peak remains.

Garrison Dam Surveillance:

- Surveillance: Team Leader, [REDACTED]; cell: (402) 350-2662. Instrumentation: Team Leader [REDACTED], cell: (701) 400-6451
- Spillway: Gates were checked for debris following high winds. Nothing was noted. Spillway approach area looks fine. There is a minor slide and a sink hole along the east bank of the spillway chute. The areas are located up the hill, adjacent to the transition at the lower end of the chute. Currently not a dam safety concern, but the area will be monitored.
- Embankment: Nothing new to report.
- East Abutment: Nothing new reported.
- Tailrace: Nothing new reported, lower end of riprap on east bank continues to erode. Still to wet to get in a make repairs.
- Surveillance Plans: Requirement for 24 hour surveillance is a rapidly moving target. Current forecast shows us hitting the previous record peak elevation for

two days this weekend, and then dropping the pool before again hitting the record pool. With this new forecast I may delay activation of our night surveillance crew?

- Surcharge of Reservoir: Current forecast shows a surcharge of less than half a foot.

Snake Creek Embankment/ Lake Audubon:

- Surveillance: Nothing to report.
- Lake Audubon has been filled to elevation 1849.5 to utilize additional storage. Currently we do not plan to increase that elevation.

Williston Levee:

- POC's [REDACTED] cell: (701) 220-2812/[REDACTED] (701) 770-8059.
- The team reported no new boils today. The main boil area remains about the same, one of those boils is producing some cloudy water but no fines at this point. Some sloughing is being noted along the relief channel. Levee road conditions remain very wet. A new crew from Omaha rotated in today.
- Still dealing with city of Williston proposals to raise the levee or to tie a secondary levee into our existing levee. Currently we do not intend to pursue either action.

Natural Resources:

- POC's [REDACTED], cell: (701) 220-3411, [REDACTED] (701) 400-0894.
- East Diagonal gate is manned/open from 0600-1830 weekdays and is only staffed from 0600-0700 on weekends. Contractors working after these hours will need to contact Natural Resources to have them open the gate.
- Still trying to work with Bis-Man Security to establish a contract for parking and traffic control on weekends. Our parking plan is being revised by Linda. Everyone will be expected to follow this plan to ensure an orderly visit for the public, as well as safety of our personnel.

Outside Maintenance:

- Flushed the drains between the man-holes which drain into headwall of tunnel #8. There is still some debris at the outfall which they will attempt to remove today.
- We are continuing to lose a significant amount of the bank along our spillway pond recreation area. Chuck assessed the situation and determined that trying to protect it by armoring the bank was not feasible, as we have about an eight foot cut bank. They will be removing the large picnic shelter today in an attempt to salvage it. It appears as though we'll have to remove all assets we can from this area or they will be lost.
- Temporary water line: If a leak is noted, notify your supervisor, [REDACTED], or I ASAP. Also notify City of Riverdale, "Clay" at (701) 471-6433 or Charles Sorensen ext. 232, or home (701) 654-7614. Shutoff valves located on the line. A drawing showing the locations of these valves is posted in the Outside Maintenance shop. A valve key to close the valves is located immediately inside the front door of the maintenance building.

Power Plant:

- Going back to four units generating today and backing off again this evening to meet WAPA load demands. Changes will be made at 8:00 am and 8:00 pm. Load changes are scheduled to be made through the weekend to assist WAPA with anticipated load demands.
- IES to start up Unit 5 today. Keeping our fingers crossed!

Weather/Safety:

Today: Sunshine and clouds mixed. High around 70F. Winds N at 10 to 20 mph. Chance of precipitation 20%.	Tonight: Partly cloudy skies. Low 49F. Winds N at 10 to 15 mph. Chance of precipitation 10%.	Tomorrow: A mainly sunny sky. High 73F. Winds NNE at 5 to 10 mph. Chance of precipitation 0%, YEAH!!!
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Needed Resources:

- One overview map requested from the District was delivered yesterday. Remaining maps to be shipped as they are completed.
- Currently working with ACE-IT and looking into upgrading our radios so that we can utilize them effectively for local communication. Cell phone coverage is spotty in several locations. Signal booster has been ordered to improve cell phone reception.
- Kim has the contract specifications for crane services necessary to place stop logs for the inspection of the regulatory tunnels. Inspection was being scheduled for the week of July 11th based on the need to surcharge, however that has also changed. [REDACTED] to coordinate Omaha inspection team members needed, as well as which repair product needs to be ordered.

Any resource needs, safety issues, or emergencies should be directed to your team leaders/POC immediately. If they cannot be reached contact [REDACTED] (cell: [REDACTED] / Home: [REDACTED]).

OPM Notes:

- I will visit with Water Management Division about potentially reducing releases while we perform an inspection of out regulating tunnels. This would alleviate the need to increase spillway flows to 120,000 cfs, which would greatly exacerbate our erosion.
- USACE Survey crew to finish river profiles from Garrison to Oahe today.
- 24 hour surveillance still up in the air. I will await the new 3- week forecast before initiating this action. Previously had planned to go to 24 hour surveillance beginning with the new crews on Sunday, June 26th.
- All personnel working on dam surveillance or instrumentation readings are to be wearing safety vests. All personnel working traffic control are also required to wear safety vests.

- Request has been made to USGS to survey the Spillway channel and the river flow below the confluence of the spillway and tailrace channels. Survey is scheduled to be done on 22 June.

NWO

From: [REDACTED] NWD02
Sent: Wednesday, June 22, 2011 8:05 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED]
[REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/22/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/21 Pool Elev: 2251.8 ft-msl
24-hr change: -0.1'
6/21 Ave Inflow: 47,000 cfs
6/21 Ave Release: 60,200 cfs
6/22 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/21 Pool Elev: 1854.3 ft-msl
24-hr change: 0.2'
6/21 Ave Inflow: 192,000 cfs
6/21 Ave Release: 150,400 cfs
6/22 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/21 Pool Elev: 1619.3 ft-msl
24-hr change: 0.4'
6/21 Ave Inflow: 218,000 cfs

6/21 Ave Release: 153,900 cfs

6/22 Scheduled Release: 160,000 cfs

Big Bend Dam (SD)

6/21 Pool Elev: 1421.0 ft-msl

24-hr change: 1.1'

6/21 Ave Inflow: 195,000 cfs

6/21 Ave Release: 162,900 cfs

6/22 Scheduled Release: 160,000 cfs

Fort Randall Dam (SD)

6/21 Pool Elev: 1368.0 ft-msl

24-hr change: 1.7'

6/21 Ave Inflow: 213,000 cfs

6/21 Ave Release: 139,600 cfs

6/22 Scheduled Release: 143,000 cfs

Gavins Point Dam (NE-SD)

6/21 Pool Elev: 1208.1 ft-msl

24-hr change: 0.7'

6/21 Ave Inflow: 159,000 cfs

6/21 Ave Release: 150,900 cfs

6/22 Scheduled Release: 150,000 cfs

Gavins Point will increase from 150,000 CFS to 155,000 cfs on Wednesday, June 22 and then to 160,000 cfs on Thursday June 23. The impact of an additional 10,000 cfs to the current 150,000 cfs will result in an increase in river stages from .7 to 1 foot at Sioux City, Iowa. This is due to recent weather systems moving through Nebraska, Montana, the Dakotas, and Iowa which has caused some adjustments to releases. Heavy rainfall during the last 48 hours in the Dakotas has totaled approximately six inches. The weather forecast over the next 1 to 3 days indicates a potential for less than a half inch of rainfall over the State of Iowa. There is one shelter open in Missouri Valley (Harrison county) and seven shelters on stand-by. There are several road closures that remain in effect.

Kansas:

Kansas reservoirs are making minimal releases to prepare for the arrival of water from Gavins Point. No breaches have occurred in levees along the Missouri River in Kansas. No significant damages are being reported at this time along the river on the Kansas side. Any flooding has been confined to low-lying agricultural lands and rural roads near the river. Shelters have been identified, but no shelters are open at this time.

No Federal Levee units are projected to overtop under low flow scenario In Doniphan County, levee R-500 (KS) is projected to overtop under high flow scenario. In Leavenworth County, once the Missouri River reaches 25.15 feet (769.2 feet) water overtops the levee north of Fort Leavenworth, affecting Sherman Field (a general aviation airport). All aircraft have been removed from the Field. The levee will be overtopped and the field flooded by the lower projected water levels.

North Dakota:

Souris River Flooding - Minot, ND

Increased releases from Canadian reservoirs continue flowing into Lake Darling. Inflows to Lake Darling are expected to peak at 20,250 cfs on June 27. Releases from Lake Darling also increased, causing severe flooding in City of Minot (population 41,000) in Ward County. Current releases from Lake Darling is 8,000 cfs, and will increase today to 1,000 cfs every 6 hours to reach 15,000 cfs on June 23.

Some Minot levees are not likely to hold; secondary dikes are being built to protect infrastructure; sandbagging efforts continue. Broadway Bridge may have to close; if so, this will cut off the north side of Minot from the south. Mandatory evacuation orders have been reinstated for 10,000-12,000 Minot residents in the original evacuation zones. Ward County residents near the Souris River must evacuate by today, June 22. The Trinity Nursing Home has been evacuated.

Significant National Weather:

Midwest: A deep low pressure system is over the Upper Mississippi Valley with a cold front extending to the Southern Plains and a warm front extending eastward to the Mid-Atlantic. On the backside of the low expect rain over the Northern Plains. Moisture from the Gulf of Mexico interacting with the frontal system will produce rain showers, thunderstorms and severe thunderstorms (including possible tornadoes) from the Great Lakes south through the Mississippi Valley.

West: A front moving ashore will produce precipitation from the Pacific Northwest to the Northern Rockies. Under high pressure the rest of the region will be generally dry. A warming trend will contribute to melt-out of the western snowpack. There will be significant rises on Western rivers and their tributaries.

v/r





FEMA

National Situation Report

As of 5:30 a.m. (EDT) Wednesday, June 22, 2011

This information is provided as a public service. Information presented is considered public information and may be distributed or copied. Use of appropriate byline/photo/image credits is requested. Published daily by the FEMA National Watch Center (NWC). Available on the internet at: <http://www.fema.gov/emergency/reports/index.shtm>. For questions or comments, contact the NWC (staffed 24 hours a day, 7 days a week) at 202-646-2828 or fema-nwc@dhs.gov.

Significant National Weather

West:

A front moving ashore will produce precipitation from the Pacific Northwest to the Northern Rockies. Under high pressure the rest of the region will be generally dry. A warming trend will contribute to melt-out of the western snowpack. There will be significant rises on Western rivers and their tributaries. The Southwest will be hot but lighter winds will assist firefighting efforts.

Midwest:

A deep low pressure system is over the Upper Mississippi Valley with a cold front extending to the Southern Plains and a warm front extending eastward to the Mid-Atlantic. On the backside of the low expect rain over the Northern Plains. Moisture from the Gulf of Mexico interacting with the frontal system will produce rain showers, thunderstorms and severe thunderstorms (including possible tornadoes) from the Great Lakes south through the Mississippi Valley.

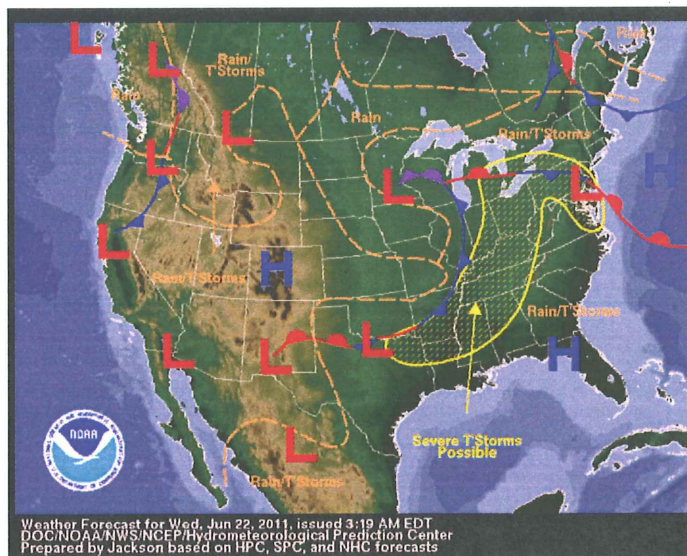
South:

The system discussed above will produce rain showers, thunderstorms and severe thunderstorms (including possible tornadoes) from Texas across the lower Mississippi Valley and much of the Gulf Coast. The Southeast will hot with many areas in excess of 100 degrees. Low relative humidity and long term drought will produce high fire danger across the Southern Plains.

Northeast:

The warm front extending from the low over the Central Plains will produce showers, thunderstorms and severe thunderstorms across much of the Mid-Atlantic.

(NOAA, NWS and various media sources)



Weather Forecast for Wed, Jun 22, 2011, issued 3:19 AM EDT
DOC/NOAA/NWS/NCEP/Hydrometeorological Prediction Center
Prepared by Jackson based on HPC, SPC, and NHC forecasts

Missouri River Basin Flooding Summary

The combination of spring snowmelt and recent rainfall events has resulted in unseasonable high runoff at many locations throughout the Missouri River Basin. In Region VII, the Missouri River Basin impacts tributaries in Nebraska, northern Kansas, western and southern Iowa, and northwest and central Missouri.

Nebraska:

Missouri River gauges at Plattsmouth and Brownsville have moved slightly above major flood stage due to rainfall, but are forecasted to gradually decrease below major flood stage over the next few days. The gauge at Rulo is approaching record flood stage. There was some minor flooding on the North Platte due to 3 to 6 inches of rainfall; there were no significant impacts.

Missouri:

The City of Craig issued an evacuation order, asking all residents to vacate their homes by noon on Tuesday, June 21. The city and surrounding areas have been under an evacuation notice for three weeks from the County Commission in the face of imminent floodwaters. A Red Cross Shelter is available in Mound City.

Little Tarkio Creek levee breached overnight. The water is threatening Fortescue, MO and is expected to flood the small town from west to east. It is primarily evacuated already. No request for assistance at this time.

Interstate 29 remains closed along parts of northwest Missouri and southeast Iowa.

Iowa:

Gavins Point will increase from 150,000 CFS to 155,000 cfs on Wednesday, June 22 and then to 160,000 cfs on Thursday June 23. The impact of an additional 10,000 cfs to the current 150,000 cfs will result in an increase in river stages from .7 to 1 foot at Sioux City, Iowa. This is due to recent weather systems moving through Nebraska, Montana, the Dakotas, and Iowa which has caused some adjustments to releases. Heavy rainfall during the last 48 hours in the Dakotas has totaled approximately six inches. The weather forecast over the next 1 to 3 days indicates a potential for less than a half inch of rainfall over the State of Iowa. There is one shelter open in Missouri Valley (Harrison county) and seven shelters on stand-by. There are several road closures that remain in effect.

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In Doniphan County, levee R-500 (KS) is projected to overtop under high flow scenario.

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Federal and State Response

FEMA Region VII

The RRCC is activated at Level III (Monitoring); RWC is operational 24/7. The Region has personnel/teams deployed as follows: Nebraska: State Liaison team consisting of 13 persons have been deployed to the SEOC (Planning, Log, Ops, GIS).; Kansas: 1 State Liaison Officer (SLO) and 1 Planner; Missouri: 1 SLO and 1 support staff person; Iowa: 1 SLO; Regional IMAT Team (Type II) is

deployed to Joplin, MO; IA SEOC remains at Level II (limited staff in the EOC); KS EOC remains at a Watch Level; NE SEOC remains at Level III (Full Activation – Mon-Fri; Duty Officer only on Sat/Sun); MO SEOC remains at Level II (Partial Activation).

Souris River Flooding – Minot, ND

Increased releases from Canadian reservoirs continue flowing into Lake Darling. Inflows to Lake Darling are expected to peak at 20,250 cfs on June 27. Releases from Lake Darling also increased, causing severe flooding in City of Minot (population 41,000) in Ward County. Current releases from Lake Darling is 8,000 cfs, and will increase today to 1,000 cfs every 6 hours to reach 15,000 cfs on June 23.

Some Minot levees are not likely to hold; secondary dikes are being built to protect infrastructure; sandbagging efforts continue. Broadway Bridge may have to close; if so, this will cut off the north side of Minot from the south. Mandatory evacuation orders have been reinstated for 10,000-12,000 Minot residents in the original evacuation zones. Ward County residents near the Souris River must evacuate by today, June 22. The Trinity Nursing Home has been evacuated.

State/Local Actions

The ND EOC is activated 24/7. The State have staged cots and blankets for 2,500 people in Minot and staged 3 days of water (enough to sustain 1,000 people) in Bismarck, ND (1 ½ hrs from Minot).

FEMA Region VIII

The RRCC is activated at Level III. Regional IMAT teams are deployed to MT, SD, and ND. Two LNOs are deployed to WY. The SD SEOC is activated at Level 1 (Full Activation). The MT, ND, WY, and UT EOCs are at Partial Activation; the CO SEOC is not activated.

Federal Actions

The National IMAT Red team has been placed on alert status. FEMA personnel are supporting the ND EOC. FEMA Logistics has food and water for 2,500 people (3 day supply), enough cots and blankets for 850 people, and 2 pallets of infant/toddler kits staged in Bismarck, ND. Food and water for 7,500 people (3 day supply), cots and blankets for 9,050 people, and infant/toddler kits are staged at Ellsworth AFB in Rapid City, SD (7-8 hours from Minot). The Region VIII RRCC is activated at Level III with Planning and Operations working with the JFO in ND. Denver MERS is providing IRV for Minot.

National Fire Activity

Tuesday, June 21, 2011:

- National Preparedness Level: 3
- Initial attack activity: Moderate (210 new fires)
- New Large Fires: 17
- Large Fires Contained: 6
- Uncontained Large Fires: 52
- Type 1 IMT Committed: 5
- Type 2 IMT Committed: 13
- States affected: AZ, NM, GA, NC, FL, OK, AR, TX, CA, AK, SC, and CO. (*NIFC*)

Wildfires

Arizona and New Mexico

Wallow Fire – FEMA 2915-FM-AZ (Apache, Navajo, Graham & Greenlee Counties); FEMA-2917-FM-NM (Catron County)

The fire has consumed 527,774 acres and is 58% contained. Mandatory evacuations remain in effect in Blue River, AZ. A pre-evacuation alert remains in effect in Apache County, AZ for Greens Peak, Hidden Meadows Lodge and the surrounding areas. There are multiple highways and road closures in the fire area.

Monument Fire – FEMA-2919-FM-AZ (Cochise County, AZ)

The fire is located within 5 miles of Sierra Vista (Pop. 3,700). The fire has consumed 27,190 acres, 40% containment. On June 21, the Governor deployed the AZ National Guard to assist. The fire has destroyed 61 residences and 4 businesses. The fire has damaged 7 residences and continues to threaten 1,500 residences. There is one shelter open with 59 occupants. Mandatory evacuations are in effect for areas west of Highway 92 between Ramsey Canyon Rd. south to Kachina Rd. and north to Fort Huachuca. Initially, there were 9,500 evacuated. Residents have been allowed back into the more southern evacuation areas. Secondary evacuation estimated at 3,496 people and 1,477 residences

Horseshoe 2 Fire – FEMA-2907-FM-AZ (Cochise County, NM)

The fire has consumed 223,214 acres and is 90% contained; full containment is expected today, June 22.

Alaska

Hasting Fire

The fire is located on State land burning approximately 15 miles northwest of Fairbanks. The fire has consumed 22,819 acres with 61% containment; expected containment unknown. The Temporary Flight Restriction (TFR) remains in place for pilots operating in the Fairbanks airspace surrounding the Hastings Fire.

Colorado

Duckett Fire – FEMA-2923-FM-CO (Westcliffe, CO)

The fire has consumed 4,358 acres and is 80% contained. Evacuations have been lifted for the Eagle Peak and Brush Creek Subdivisions, and Maytag Ranch.

Georgia

Honey Prairie Complex Fires – FEMA-2920-FM-GA (Racepoint, Honey Prairie, Paxton Road and Durdin Prairie Fires)

Fires are burning near the Okefenokee National Wildlife Refuge, 5 miles NE of Fargo, GA. The fire has consumed 251,570 acres with 60% containment.

Sweat Farm Again Fire – FEMA-2921-FM-GA

19,725 acres burned, with 35% containment.

Texas

Dyre Mills Fire (Grimes County, TX)

The fire has consumed 5,800 acres with 85% containment. A mandatory evacuation is in effect for an area of approximately 1,800 homes and businesses. The American Red Cross opened a shelter at the Navasota High School.

FEMA Region VI

The RRCC is not activated. Region VI LNO is available to deploy, if needed. NM SEOC has reverted back to Level IV (Normal Operations). TX SEOC remains activated to Level II (Escalated Response due to wildfire activity).

FEMA Region IX

The RRCC is not activated. Region IX IMAT (Type III): 2 Available. Region IX personnel are deployed as follows: AZ SEOC (3 LNOs and 1 GIS Specialist); GACC SWCC (1 LNO); 2 Regional IMATs available; Arizona State EOC remains fully activated.

Fire Management Assistance Grant (FMAG)

No new activity. (*FEMA HQ, NIFC, InciWeb*)

Earthquake Activity

No significant activity. (*USGS*)

Tropical Activity

Atlantic / Caribbean / Gulf of Mexico

No activity expected within the next 48 hours.

Eastern / Central Pacific

The National Hurricane Center has issued the last advisory on Beatriz which has dissipated about 130 miles southwest of Cabo Corrientes, Mexico. Elsewhere, tropical cyclone formation is not expected during the next 48 hours.

Western / South Pacific:

No tropical cyclone activity affecting U.S. territories. (*NOAA, NWS, NHC, CPHC JTWC*)

Declaration Activity

- FEMA-1989-DR-OK; Amendment # 2, effective June 21, 2011, adds six counties for Public Assistance (already designated for Individual Assistance), and six counties for Public Assistance.
- FEMA-1979-DR-TN; Amendment # 4, effective June 21, 2011, adds Weakley County for Public Assistance, including direct Federal assistance.
- FEMA-1980-DR-MO; Amendment # 8, effective June 21, 2011, adds Carter and Wayne Counties for Individual Assistance (already designated for Public Assistance, including direct Federal assistance), and Lawrence County for Individual Assistance. (*FEMA HQ*)

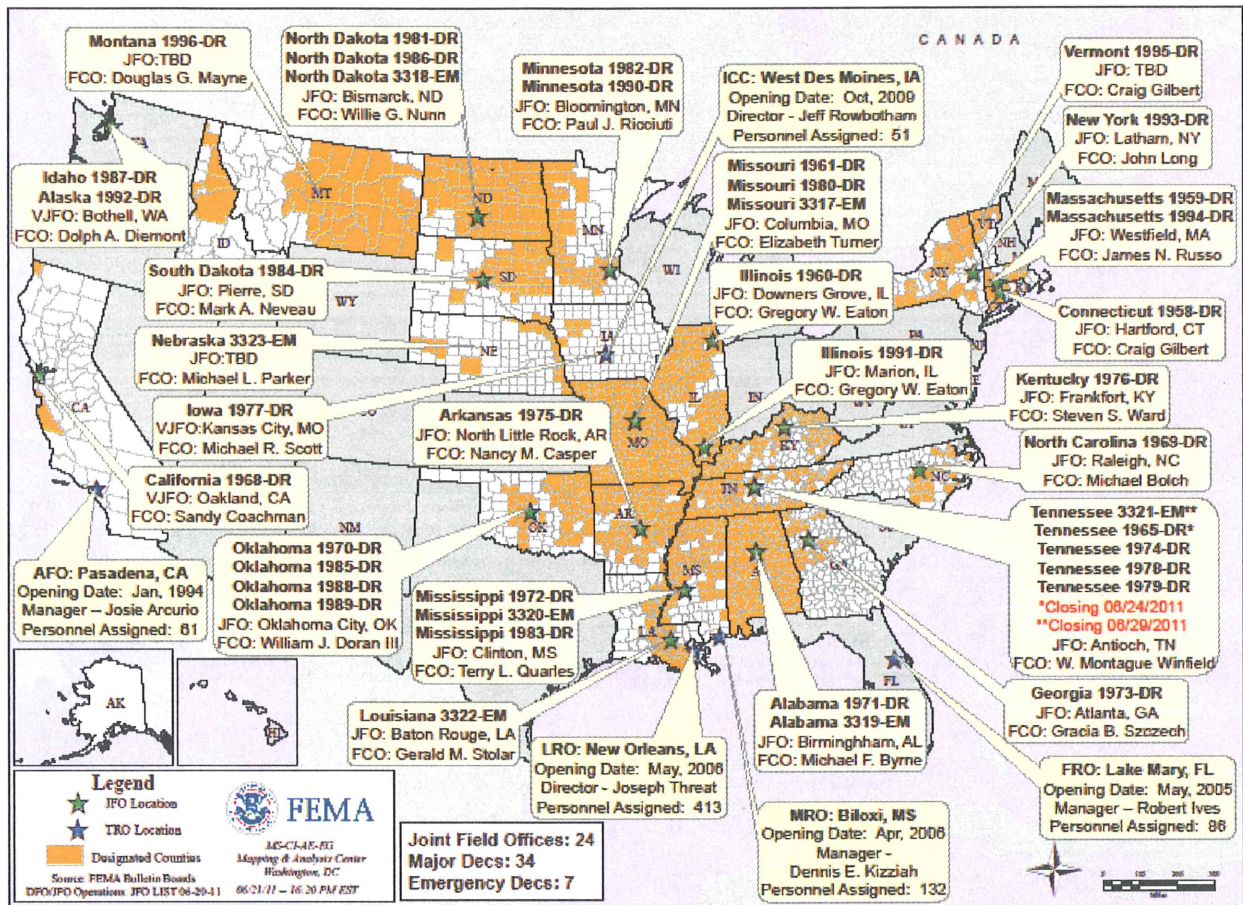
Joint Preliminary Damage Assessment Activity

Number of Counties/Tribes							
Region	State	Event	IA/ PA	Requested	Ongoing	Complete	(Estimated) Start/End Date
II	NY	Spring Flooding 4/26	IA	4	4	0	Began 6/14 End TBD
			PA	8	6	2	
IV	MS	Severe Weather 5/3	PA	14	7	7	Began 6/10 End TBD
V	MI	Severe Storms 5/29	IA	1	0	0	Began 6/17 End TBD
			PA	1	0	0	
VII	KS	Severe Storms, Tornadoes & Flooding 5/19	PA	29	0	0	Begin 6/20 End TBD
VII	IA	Flooding 5/25	PA	6	6	0	Began 6/16 End TBD
VIII	MT	Flooding	IA	15 counties; 1 Tribe	0	0	Begin 6/21 End 6/25
VIII	ND	Flooding	IA	4	1	3	Began 6/18 End 6/22
VIII	WY	Flooding	PA	15	0	0	Began 6/24 End 6/29

On-Call and Deployed Teams		
Teams	Status	Location
National IMAT Red	Activated	Deployed to MS (On alert for deployment to Bismarck, ND)
National IMAT White	Not Activated	
National IMAT Blue	Activated	Deployed to AL
Regional Teams		
Region I IMAT	Activated	Deployed to MA
Region II IMAT	Not Activated	
Region III IMAT	Not Activated	Reconstituting
Region IV IMAT	Activated	Type II deployed to TN and AL
Region V IMAT	Not Activated	
Region VI IMAT	Activated	Type II supporting 1975-DR-AR Type III Supporting 1971-DR-TX Type III deployed to OK
Region VII IMAT	Activated	Type II 1980-DR-MO Type II deployed to NE
Region VIII IMAT	Activated	Type III supporting DR-1984-SD Type III supporting DR-1981/1986 ND Type II deployed to MT
Region IX IMAT	Not Activated	
Region X IMAT	Not Activated	Type II supporting DR-1992-AK
Other FEMA National Teams		
Hurricane Liaison Team	Activated	
NRCC	Not Activated	
National Watch Center	24/7	
DEST	Not Activated	

Activation Levels		
Region	RRCC	Watch
Region I	Watch/Steady State	Maynard MOC (24/7)
Region II	Watch/Steady State	24/7
Region III	Watch/Steady State	24/7
Region IV	Watch/Steady State	24/7
Region V	Watch/Steady State	24/7
Region VI	Watch/Steady State	Denton MOC (24/7)
Region VII	Level III	24/7
Region VIII	Level III	Denver MOC (24/7)
Region IX	Watch/Steady State	24/7
Region X	Watch/Steady State	Bothell MOC (24/7)

Open Field Offices & Designated Counties as of 06/22/2011



MapID: cba48b1e36062111553hgprod

 NWO

From: Farhat, Jody S NWD02
Sent: Thursday, June 23, 2011 8:57 AM
To: Anderson, G Witt NWD
Subject: Navigation closure (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

The river is closed to commercial and recreational traffic from river mile 450 near St. Joe, Missouri to Gavins Point dam.

Jody

Classification: UNCLASSIFIED

Caveats: NONE

NWO

From: Farhat, Jody S NWD02
Sent: Thursday, June 23, 2011 10:25 AM
To: Anderson, G Witt NWD
Subject: Porter Response (UNCLASSIFIED)
Attachments: Todd Porter ND State Rep.pdf

Classification: UNCLASSIFIED
Caveats: NONE

Witt, here's the signed porter response.

Jody

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Saturday, June 18, 2011 5:54 PM
To: McMahon, John R BG NWD
Subject: Fw: North Dakota Legislative Assembly (UNCLASSIFIED)

----- Original Message -----

From: Farhat, Jody S NWD02
To: Ruch, Robert J COL NWO; Anderson, G Witt NWD; Blechinger, Erik T NWO; [REDACTED] NWD
Sent: Sat Jun 18 10:58:04 2011
Subject: RE: North Dakota Legislative Assembly (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir - Here is a pdf of the signed response.

Jody

-----Original Message-----

From: Ruch, Robert J COL NWO
Sent: Saturday, June 18, 2011 12:43 PM
To: Anderson, G Witt NWD; Blechinger, Erik T NWO; [REDACTED] NWD
Cc: Farhat, Jody S NWD02
Subject: RE: North Dakota Legislative Assembly (UNCLASSIFIED)

I still don't think I have been provided a copy of the reply. Does anyone have it?

COL R

-----Original Message-----

From: Anderson, G Witt NWD
Sent: Tuesday, June 14, 2011 8:41 AM
To: Blechinger, Erik T NWO; [REDACTED] NWD
Cc: Ruch, Robert J COL NWO; Farhat, Jody S NWD02
Subject: FW: North Dakota Legislative Assembly (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED

Caveats: NONE

-----Original Message-----

From: Ruch, Robert J COL NWO

Sent: Tuesday, June 14, 2011 6:34 AM

To: Anderson, G Witt NWD

Subject: FW: North Dakota Legislative Assembly (UNCLASSIFIED)

Witt,

Will this reply be going out today?

V/R,

COL Bob Ruch

Commander

Omaha District, USACE

(402) 995-2001

<https://www.nwo.usace.army.mil/>

[REDACTED] do you and NWO have the action to close on bullet 4, so we can get this out?

Thanks,

Witt

-----Original Message-----

From: [REDACTED] HQ02

Sent: Friday, June 10, 2011 10:48 AM

To: Ruch, Robert J COL NWO; [REDACTED] NWO; [REDACTED] NWO

Cc: [REDACTED] NWO; [REDACTED] NWO

Subject: North Dakota Legislative Assembly (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Sir,

During the City update today Congressman Rick Berg presented me with the attached RFI regarding current Missouri River flooding. He wanted me to follow up on how long it would take to get a response to the RFI, I responded that I would contact you and provide a suspense. Also the Mayor of Bismarck turned over the facilitator responsibilities of the daily meeting to the Bismarck EOC Director. Therefore future USACE presence at the daily meeting is not required. However I did explain to the Director that we would be available if any questions or issues came about. Subject to your approval I will discontinue presenting at the City meeting and provide the City with daily input.

V/r

[REDACTED]

[REDACTED]

HQ-USACE Contingency Operations Directorate

441 G Street NW

Washington, DC 20314
[REDACTED] Blackberry
[REDACTED] Cell
[REDACTED] [sace.army.mil](mailto:[REDACTED]@sace.army.mil)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NORTHWESTERN DIVISION
1616 CAPITOL AVENUE
OMAHA NE 68102

June 15, 2011

Missouri River Basin Water Management Division

Mr. Todd Porter, State Representative
North Dakota Legislative Assembly
600 East Boulevard
Bismarck, North Dakota 58505

Dear Representative Porter:

Thank you for your letter to Colonel Robert Ruch, Commander of the Omaha District Corps of Engineers, dated June 9, 2011, requesting information related to the current Missouri River flooding in Mandan/Bismarck, North Dakota. Regulation of the six mainstem dams on the Missouri River is handled by the Missouri River Basin Water Management Division, part of the Corps' Northwestern Division; therefore your letter was forwarded to me for response. A copy of this response will be forwarded to Colonel Ruch. Responses to your questions are provided below.

Question 1. Why did the United States Army Corps of Engineers stop releasing water at an increased rate around the middle of March 2011 and not increase releases from Garrison Dam until May 6, 2011, especially given the fact that the reservoir was full and the snow pack was at least 140 percent of normal?

Answer: Garrison Dam was operated during March and April to provide flood control for the cities of Bismarck and Mandan, and other communities along that reach of the river. Releases were reduced in mid-March when the ice went out of the river to provide channel capacity for the melt of the above normal plains snowpack. Mountain snowpack on April 1, 2011, was 112 percent of normal in the reach between Fort Peck and Garrison dams, and rose dramatically in the latter half of April reaching the peak level of 136 percent of normal on May 2. At no time, prior to the repeated rounds of heavy rain in the Upper Basin in May, which resulted in record single-month inflows into the reservoir system, did we have reason to expect record releases. Immediately after this rainfall event we began incrementally stepping up our releases in a controlled manner, while still allowing people downstream to prepare for a record runoff water year.

Question 2. What role, if any, did the snowpack in the upper portion of the Missouri River Basin play in the management of the water releases from the Garrison dam?

Answer: Snowpack on the plains and in the mountains was above average this year, however at no time prior to the heavy rains in May did we have reason to expect record releases. Our April 1, 2011 monthly study indicated peak releases from Garrison this summer in the range of 29,000 to 30,500 cfs. Those forecasted peak releases increased to 49,000 cfs by the May 1, 2011 study due to the increase in mountain snowpack as noted above, but were still well below historic levels.

Question 3. Given the fact that the reservoir system was full in 2010, why weren't the releases timed to prevent the catastrophic event that we are currently experiencing?

Answer: Releases from the Missouri River dams last fall and throughout the winter of 2010 were above normal in order to evacuate all of the 2010 flood waters prior to the 2011 runoff season. On January 28, 2011, the designed flood storage (16.3 Million Acre Feet) was available in the Missouri River reservoir system for this year's runoff season. At that point, and through the first of May, we had no reason to think we needed to increase releases beyond normal levels.

Question 4. Please provide any record regarding the decision to delay Garrison Dam releases and any internal memos/emails discussing the decision to delay the releases and slow the releases in 2011.

Answer: We will accommodate your requests for records, memos and emails concerning Garrison Dam releases, however, because it is a request for copies of documents, we will coordinate this request as if it were submitted pursuant to the Freedom of Information Act (FOIA), 5 USC Section 552. I have forwarded this request to Ms. Linda Burke in the Omaha District Office of Counsel, 402-995-2603, and she will immediately begin processing this portion of your records request in compliance with FOIA requirements. You can expect to receive documents within 20 business days.

Question 5. What part did the nesting season of the piping plover play in any water management decisions?

Answer: No operational decisions this year were driven by the needs of fish and wildlife or the Endangered Species Act – we have been operating solely for flood risk reduction. Summer adjustments to operations to minimize flooding of protected tern and plover eggs and chicks did not take place this year due to high flow conditions.

I understand the importance of the Missouri River to citizens in the State of North Dakota and appreciate your commitment to raise these issues on their behalf. If you or your staff has any questions, please feel free to contact me at (503) 808-3730 or Jody Farhat, Chief of Missouri River Basin Water Management Division at (402) 996-3840.

Sincerely,



Witt Anderson
Director, Programs

STAFFING SHEET

CENWD-PDR

15 June 2011

SUBJECT: Response to North Dakota State Representative Todd Porter regarding flooding on the Missouri River.

DESIRED ACTION: Signature, date and dispatch original.

MFR: Letter sent in response to correspondence received regarding the flooding on the Missouri River. Response contained answers to specific questions regarding the regulation of Garrison dam in March and April 2011, the role of the snowpack in the upper basin, timing of releases to evacuate the 2011 flood waters, and the role of the nesting piping plovers in water management decisions. Letter also requested copies of documents concerning regulation of Garrison Dam. Request will be handled as a FOIA request and coordinated with Linda Burke of Omaha District OC.

Concur/Non-concur

Concur/Non-concur

Concur/Non-concur

15 June 2011
Ms. Farhat/aap/3840
OK 15 June 2011
[REDACTED] CECC-NWD

[REDACTED] CENWD-PD

CF:

CENWO-DE [REDACTED]

CENWO-OC [REDACTED]

CENWK-DE [REDACTED]

MRJIC

From: Farhat, Jody S NWD02
Sent: Thursday, June 23, 2011 12:12 PM
To: Hendee, David; Farmer, Monique L NWO
Subject: RE: David Hendee flood questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Dave - Answers to your questions are shown below:

1. How much water is flowing past Omaha now?

The National Weather Service (NWS) estimates current flow at Omaha to be 204,000 cfs at a stage of 34.8 ft.

2. How much water is forecast to flow past Omaha on Sunday (when my story is scheduled to be published)?

The NWS forecast for Sunday morning is 195,000 cfs at a stage of 34.4 ft.

(I assume the current and Sunday totals would be the Gavin Point releases plus water contributed by downstream tributaries, correct?)

Correct. Today's flow would include the 150,000 cfs release. Releases reached 155,000 cfs yesterday (Wed) and 160,000 cfs this morning. Most of that increase will have made it to Omaha by Sunday morning. The forecasted flow is declining because the tributaries are falling faster than we are increasing releases.

3. Is the June 1 (or so) runoff forecast of 54.6 maf unchanged so far this month? If it has changed, what is the new number?

The June 1 number still stands. We'll update our runoff forecast on 1 July.

4. Technical question: Will all of the runoff this year have to be evacuated from the system this year? Is that the intent?

Yes, in accordance with the Master Manual we plan to evacuate all of the 2011 runoff prior to the start of next year's runoff season. This may include slightly above normal winter releases in December and January, but the bulk of the flood water will be evacuated this summer and into the fall.

5. Is there a priority ranking for the eight authorized purposes? Or can they be listed in any order, with flood control at the top?

The 8th Circuit Court issued a decision in February 2003 which said the Flood Control Act of 1944 recognized that flood control and navigation were the dominant functions of the reservoir system. We generally list flood control on the top and the remainder in any order.

6. What is the average peak release for Gavins Point Dam since it started operations?

Since the reservoir system first filled in 1967, the maximum daily outflow from Gavins Point dam has averaged 38.7 kcfs.

7. The previous record peak release for Gavins Point was 70,000 cfs, right? Is 70,000 the exact number, or was it 69,590 cfs or 70,435 cfs or whatever?

The previous record release was 70,100 cfs in the fall of 1997.

Let me know if you have additional questions.

Jody

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: North Dakota Joint Information Center [ndjic@nd.gov]
Sent: Thursday, June 23, 2011 12:44 PM
Subject: Riverwatch June 23, 2011 #2011MoRivFlood
Attachments: 623NR-RIVERWATCH6-11.pdf

Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)

Midnight Elevation

- * 2251.7 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 46,000 cfs (22 Jun)
- * 47,000 cfs (21 Jun)

Daily Avg. Release

- * 59,700 cfs (22 Jun)
- * 60,200 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)

- * 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been decreased to 60,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.

Record Pool Elevation (Year)

- * 2251.6 msl (1975)

Record Flow (Year)

- * 35,000 cfs (1975)

Projected Record Flow (Date)

- * 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

- * 1854.4 ft msl
- * 24-hr Change (+0.1 ft)

Daily Avg. Inflow

- * 169,000 cfs (22 Jun)
- * 192,000 cfs (21 Jun)

Daily Avg. Release

- * 150,500 cfs (22 Jun)
- * 150,400 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)

* 1854 ft msl

River Stage (Bismarck)

* 18.88 (0845 CDT 23 Jun)

* Flood stage - 16 ft

* 18.89 (0715 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

* Reservoir is currently using surcharge storage above the exclusive flood control zone.

* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

* 1854.8 msl (1975)

Record Flow (Year)

* 65,000 cfs (1975)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

* 1619.3 ft msl

* 24-hr Change (-0.0 ft)

Daily Avg. Inflow

* 178,000 cfs (22 Jun)

* 218,000 cfs (21 Jun)

Daily Avg. Release

* 150,300 cfs (22 Jun)

* 153,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1617 ft msl - 1620 ft msl

Top of Spillway Gates(closed)

* 1620 ft msl

River Stage (Pierre)

* 19.4 (0830 CDT 23 Jun)

* Flood stage - 15 ft

* 19.71 (0731 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up again to 160,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.
- * Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1421.5 ft msl
- * 24-hr Change (+0.5 ft)

Daily Avg. Inflow

- * 179,000 cfs (22 Jun)
- * 195,000 cfs (21 Jun)

Daily Avg. Release

- * 164,600 cfs (22 Jun)
- * 162,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates(closed)

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 165,000 cfs.
- * Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

- * 1422.1 msl (1991)

Record Flow (Date)

- * 74,000 cfs (1997)

Projected Record Flow (Date)

- * 165,000 cfs (Late June)

Fort Randall (In operation since 1953)

Midnight Elevation

- * 1369.1 ft msl
- * 24-hr Change (+1.1 ft)

Daily Avg. Inflow

- * 198,000 cfs (22 Jun)
- * 213,000 cfs (21 Jun)

Daily Avg. Release

- * 138,300 cfs (22 Jun)
- * 139,600 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1365 ft msl - 1375 ft msl

Top of Spillway Gates(closed)

- * 1375 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 157,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

- * 1372.2 msl (1997)

Record Flow (Date)

- * 67,000 cfs (1997)

Projected Record Flow (Date)

- * 157,000 cfs (Late June)

Gavins Point (In operation since 1955)

Midnight Elevation

- * 1208.3 ft msl
- * 24-hr Change (+0.2 ft)

Daily Avg. Inflow

- * 157,000 cfs (22 Jun)
- * 159,000 cfs (21 Jun)

Daily Avg. Release

- * 154,300 cfs (22 Jun)
- * 150,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1208 ft msl - 1210 ft msl

Top of Spillway Gates(closed)

- * 1210 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 160,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

- * 1209.7 msl (2010)

Record Flow (Date)

- * 70,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x2000687x201169>>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph.

Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%.

Friday: Sunny, high near 76. Northwest wind 8 to 11 mph.

24-hr forecast (Williston, ND)

Today: Mostly sunny, high near 76. South wind 6 to 11 mph.

Tonight: 50% chance of showers and t-storms after 1am. Mostly cloudy, low around 58. Southeast wind 10 to 14 mph, with gusts as high as 20 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

Friday: 50% chance of showers and t-storms. Mostly cloudy, high near 74. South wind 6 to 8 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

24-hr forecast (Riverdale, ND)

Today: Sunny, high near 73. Calm wind becoming south around 5 mph.

Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Washburn, ND)

Today: Sunny, high near 72. Calm wind.

Tonight: Mostly clear, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 70. South wind 6 to 11 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: Sunny, high near 74. Calm wind.

Tonight: Mostly clear, low around 53. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Lower Brule, SD)

Today: Sunny, high near 76. North northwest wind around 7 mph.

Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.

24-hr forecast (Chamberlain, SD)

Today: Sunny, high near 76. North northwest wind 6 to 8 mph.

Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph.

Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.

24-hr forecast (Yankton, SD)

Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph.

Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm.

Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph.

24-hr forecast (Sioux City, IA)

Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph.

Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm.

Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

24-hr forecast (Omaha, NE)

Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph.

Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm.

Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x2000686x2202264>>

Internet: <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x2000685x1682644>>

Facebook: <http://www.facebook.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x2000684x1163024>>
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YouTube: <http://www.youtube.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x2000682x123784>>
Flickr: <http://www.flickr.com/photos/omahausace> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x2000681x2124873>>

Description: Image removed by sender.

If you would rather not receive future communications from U.S. Army Corps of Engineers Omaha District, let us know by clicking here. <<http://USACEARMY.pr-optout.com/OptOut.aspx?520028x24691x318402x3x1883377x24000x6&Email=cfong%40nd.gov>>
U.S. Army Corps of Engineers Omaha District, 1616 Capitol Ave, Omaha, NE 68102 United States



Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2251.7 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow 46,000 cfs (22 Jun) 47,000 cfs (21 Jun) Daily Avg. Release 59,700 cfs (22 Jun) 60,200 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been decreased to 60,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1854.4 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow 169,000 cfs (22 Jun) 192,000 cfs (21 Jun) Daily Avg. Release 150,500 cfs (22 Jun) 150,400 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) 1854 ft msl River Stage (Bismarck) 18.88 (0845 CDT 23 Jun) - Flood stage – 16 ft 18.89 (0715 CDT 22 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. - Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1619.3 ft msl 24-hr Change (-0.0 ft) Daily Avg. Inflow 178,000 cfs (22 Jun) 218,000 cfs (21 Jun) Daily Avg. Release 150,300 cfs (22 Jun) 153,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) 1620 ft msl River Stage (Pierre) 19.4 (0830 CDT 23 Jun) - Flood stage – 15 ft 19.71 (0731 CDT 22 Jun) Planned Scheduled Releases (Subject to Change) - Releases will be stepped up again to 160,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. - Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1421.5 ft msl 24-hr Change (+0.5 ft) Daily Avg. Inflow 179,000 cfs (22 Jun) 195,000 cfs (21 Jun) Daily Avg. Release 164,600 cfs (22 Jun) 162,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 165,000 cfs. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 165,000 cfs (Late June)	Midnight Elevation 1369.1 ft msl 24-hr Change (+1.1 ft) Daily Avg. Inflow 198,000 cfs (22 Jun) 213,000 cfs (21 Jun) Daily Avg. Release 138,300 cfs (22 Jun) 139,600 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 157,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 157,000 cfs (Late June)	Midnight Elevation 1208.3 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 157,000 cfs (22 Jun) 159,000 cfs (21 Jun) Daily Avg. Release 154,300 cfs (22 Jun) 150,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Late June)



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph. Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%. Friday: Sunny, high near 76. Northwest wind 8 to 11 mph. 24-hr forecast (Williston, ND) Today: Mostly sunny, high near 76. South wind 6 to 11 mph. Tonight: 50% chance of showers and t-storms after 1am. Mostly cloudy, low around 58. Southeast wind 10 to 14 mph, with gusts as high as 20 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms. Friday: 50% chance of showers and t-storms. Mostly cloudy, high near 74. South wind 6 to 8 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.	24-hr forecast (Riverdale, ND) Today: Sunny, high near 73. Calm wind becoming south around 5 mph. Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible. 24-hr forecast (Washburn, ND) Today: Sunny, high near 72. Calm wind. Tonight: Mostly clear, low around 54. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 70. South wind 6 to 11 mph. New rainfall amounts 0.25 to 0.5 inch possible.	24-hr forecast (Pierre, SD) Today: Sunny, high near 76. North northwest wind 3 to 5 mph. Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph. Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph. 24-hr forecast (Ft. Pierre, SD) Today: Sunny, high near 76. North northwest wind 3 to 5 mph. Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph. Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.	24-hr forecast (Lower Brule, SD) Today: Sunny, high near 76. North northwest wind around 7 mph. Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast. Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.	24-hr forecast (Chamberlain, SD) Today: Sunny, high near 76. North northwest wind 6 to 8 mph. Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph. Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.	24-hr forecast (Yankton, SD) Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph. Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm. Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph. 24-hr forecast (Sioux City, IA) Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph. Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm. Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun, 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
	24-hr forecast (Bismarck/Mandan, ND) Today: Sunny, high near 74. Calm wind. Tonight: Mostly clear, low around 53. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.				24-hr forecast (Omaha, NE) Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph. Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm. Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

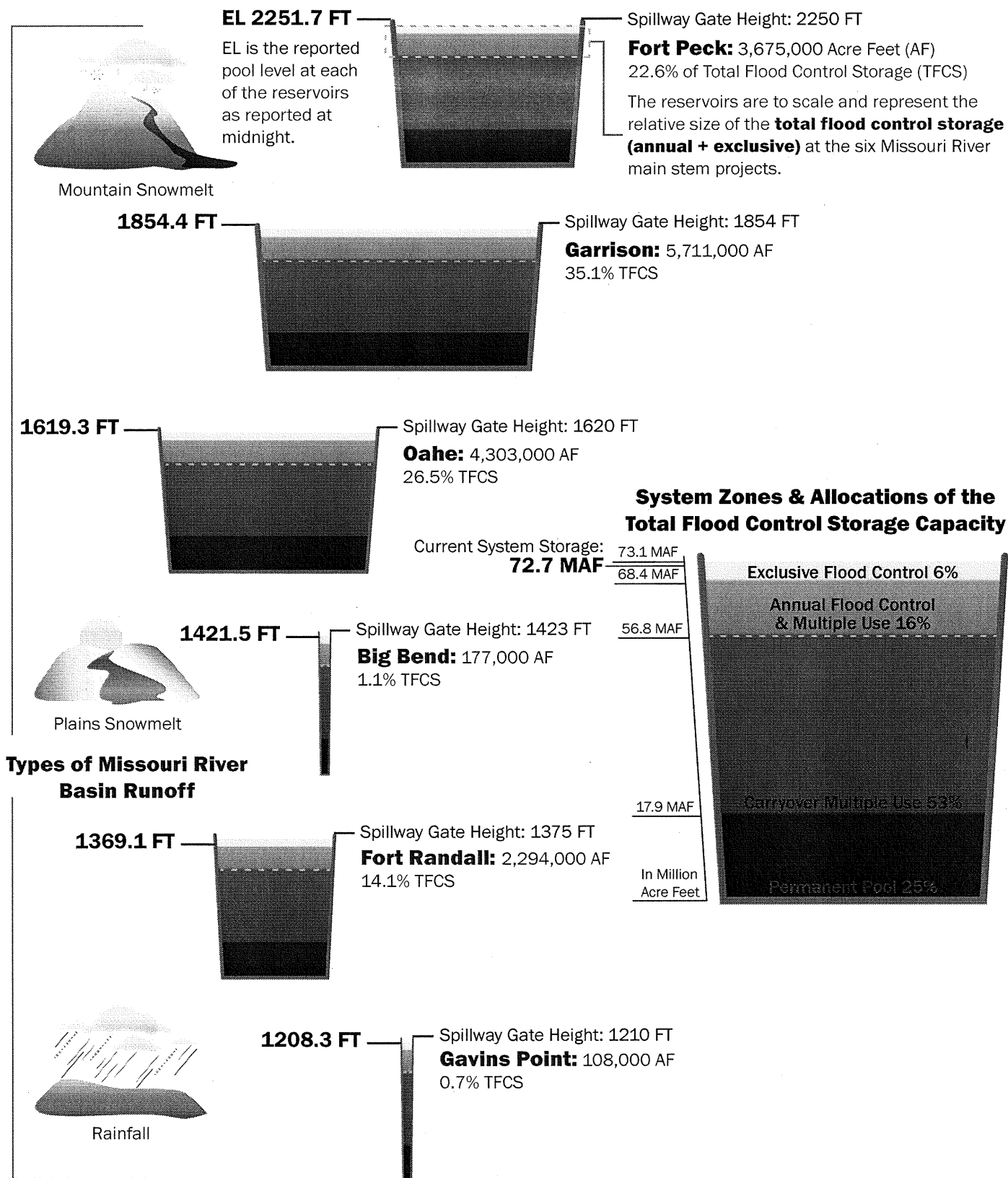
Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Main Stem Reservoir System

Midnight Elevation (EL) Forecast: June 23, 2011 (feet above mean sea level)



[REDACTED]

From: Hendee, David [David.Hendee@owh.com]
Sent: Thursday, June 23, 2011 12:18 PM
To: Farhat, Jody S NWD02
Subject: RE: David Hendee flood questions (UNCLASSIFIED)

Thanks so much.

I hope will other questions wont' be so lame...but I appreciate your help!

--david

-----Original Message-----

From: Farhat, Jody S NWD02 [<mailto:Jody.S.Farhat@usace.army.mil>]
Sent: Thursday, June 23, 2011 12:12 PM
To: Hendee, David; Farmer, Monique L NWO
Subject: RE: David Hendee flood questions (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Dave - Answers to your questions are shown below:

1. How much water is flowing past Omaha now?

The National Weather Service (NWS) estimates current flow at Omaha to be 204,000 cfs at a stage of 34.8 ft.

2. How much water is forecast to flow past Omaha on Sunday (when my story is scheduled to be published)?

The NWS forecast for Sunday morning is 195,000 cfs at a stage of 34.4 ft.

(I assume the current and Sunday totals would be the Gavin Point releases plus water contributed by downstream tributaries, correct?)

Correct. Today's flow would include the 150,000 cfs release. Releases reached 155,000 cfs yesterday (Wed) and 160,000 cfs this morning. Most of that increase will have made it to Omaha by Sunday morning. The forecasted flow is declining because the tributaries are falling faster than we are increasing releases.

3. Is the June 1 (or so) runoff forecast of 54.6 maf unchanged so far this month? If it has changed, what is the new number?

The June 1 number still stands. We'll update our runoff forecast on 1 July.

4. Technical question: Will all of the runoff this year have to be evacuated from the system this year? Is that the intent?

Yes, in accordance with the Master Manual we plan to evacuate all of the 2011 runoff prior to the start of next year's runoff season. This may include slightly above normal winter releases in December and January, but the bulk of the flood water will be evacuated this summer and into the fall.

5. Is there a priority ranking for the eight authorized purposes? Or can they be listed in any order, with flood control at the top?

The 8th Circuit Court issued a decision in February 2003 which said the Flood Control Act of 1944 recognized that flood control and navigation were the dominant functions of the reservoir system. We generally list flood control on the top and the remainder in any order.

6. What is the average peak release for Gavins Point Dam since it started operations?

Since the reservoir system first filled in 1967, the maximum daily outflow from Gavins Point dam has averaged 38.7 kcfs.

7. The previous record peak release for Gavins Point was 70,000 cfs, right? Is 70,000 the exact number, or was it 69,590 cfs or 70,435 cfs or whatever?

The previous record release was 70,100 cfs in the fall of 1997.

Let me know if you have additional questions.

Jody

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: Williamson, Eileen L NWO
Sent: Thursday, June 23, 2011 12:16 PM
To: DLL-CENWO-ALL Employees; DLL-CENWD Zorinsky-Floor 3
Subject: FW: Riverwatch June 23, 2011 #2011MoRivFlood (UNCLASSIFIED)
Attachments: 623NR-RIVERWATCH6-11.pdf

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----

From: U.S. Army Corps of Engineers Omaha District [mailto:eileen.l.williamson@usace.army.mil]
Sent: Thursday, June 23, 2011 11:39 AM
To: Williamson, Eileen L NWO
Subject: Riverwatch June 23, 2011 #2011MoRivFlood

Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)

Midnight Elevation

- * 2251.7 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 46,000 cfs (22 Jun)
- * 47,000 cfs (21 Jun)

Daily Avg. Release

- * 59,700 cfs (22 Jun)
- * 60,200 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)

- * 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been decreased to 60,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.

Record Pool Elevation (Year)

- * 2251.6 msl (1975)

Record Flow (Year)

- * 35,000 cfs (1975)

Projected Record Flow (Date)

- * 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

- * 1854.4 ft msl
- * 24-hr Change (+0.1 ft)

Daily Avg. Inflow

- * 169,000 cfs (22 Jun)
- * 192,000 cfs (21 Jun)

Daily Avg. Release

- * 150,500 cfs (22 Jun)
- * 150,400 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)

- * 1854 ft msl

River Stage (Bismarck)

- * 18.88 (0845 CDT 23 Jun)
- * Flood stage - 16 ft
- * 18.89 (0715 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 150,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.
- * Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

- * 1854.8 msl (1975)

Record Flow (Year)

- * 65,000 cfs (1975)

Projected Record Flow (Date)

- * 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

- * 1619.3 ft msl
- * 24-hr Change (-0.0 ft)

Daily Avg. Inflow

- * 178,000 cfs (22 Jun)
- * 218,000 cfs (21 Jun)

Daily Avg. Release

- * 150,300 cfs (22 Jun)
- * 153,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1617 ft msl - 1620 ft msl

Top of Spillway Gates(closed)

* 1620 ft msl

River Stage (Pierre)

* 19.4 (0830 CDT 23 Jun)

* Flood stage - 15 ft

* 19.71 (0731 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up again to 160,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

* Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

* 1618.7 msl (1995)

Record Flow (Year)

* 59,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

* 1421.5 ft msl

* 24-hr Change (+0.5 ft)

Daily Avg. Inflow

* 179,000 cfs (22 Jun)

* 195,000 cfs (21 Jun)

Daily Avg. Release

* 164,600 cfs (22 Jun)

* 162,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1422 ft msl - 1423 ft msl

Top of Spillway Gates(closed)

* 1423 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 165,000 cfs.

* Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 165,000 cfs (Late June)

Fort Randall (In operation since 1953)

Midnight Elevation

* 1369.1 ft msl

* 24-hr Change (+1.1 ft)

Daily Avg. Inflow

* 198,000 cfs (22 Jun)

* 213,000 cfs (21 Jun)

Daily Avg. Release

* 138,300 cfs (22 Jun)

* 139,600 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates(closed)

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 157,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 157,000 cfs (Late June)

Gavins Point (In operation since 1955)

Midnight Elevation

* 1208.3 ft msl

* 24-hr Change (+0.2 ft)

Daily Avg. Inflow

* 157,000 cfs (22 Jun)

* 159,000 cfs (21 Jun)

Daily Avg. Release

* 154,300 cfs (22 Jun)

* 150,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates(closed)

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph.

Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%.

Friday: Sunny, high near 76. Northwest wind 8 to 11 mph.

24-hr forecast (Williston, ND)

Today: Mostly sunny, high near 76. South wind 6 to 11 mph.

Tonight: 50% chance of showers and t-storms after 1am. Mostly cloudy, low around 58. Southeast wind 10 to 14 mph, with gusts as high as 20 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

Friday: 50% chance of showers and t-storms. Mostly cloudy, high near 74. South wind 6 to 8 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

24-hr forecast (Riverdale, ND)

Today: Sunny, high near 73. Calm wind becoming south around 5 mph.

Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Washburn, ND)

Today: Sunny, high near 72. Calm wind.

Tonight: Mostly clear, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 70. South wind 6 to 11 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: Sunny, high near 74. Calm wind.

Tonight: Mostly clear, low around 53. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Lower Brule, SD)

Today: Sunny, high near 76. North northwest wind around 7 mph.

Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.

24-hr forecast (Chamberlain, SD)

Today: Sunny, high near 76. North northwest wind 6 to 8 mph.

Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph.

Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.

24-hr forecast (Yankton, SD)

Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph.

Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm.

Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph.

24-hr forecast (Sioux City, IA)

Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph.

Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm.

Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

24-hr forecast (Omaha, NE)

Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph.

Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm.

Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Classification: UNCLASSIFIED

Caveats: NONE



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Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Oahe (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation ■ 2251.7 ft msl ■ 24-hr Change (-0.1 ft) Daily Avg. Inflow ■ 46,000 cfs (22 Jun) ■ 47,000 cfs (21 Jun) Daily Avg. Release ■ 59,700 cfs (22 Jun) ■ 60,200 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) ■ 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) ■ 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) ■ 2250 ft msl Planned Scheduled Releases (Subject to Change) ■ Releases have been decreased to 60,000 cfs. ■ Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) ■ 2251.6 msl (1975) Record Flow (Year) ■ 35,000 cfs (1975) Projected Record Flow (Date) ■ 65,000 cfs (Mid June)	Midnight Elevation ■ 1854.4 ft msl ■ 24-hr Change (+0.1 ft) Daily Avg. Inflow ■ 169,000 cfs (22 Jun) ■ 192,000 cfs (21 Jun) Daily Avg. Release ■ 150,500 cfs (22 Jun) ■ 150,400 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) ■ 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) ■ 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) ■ 1854 ft msl River Stage (Bismarck) ■ 18.88 (0845 CDT 23 Jun) ■ Flood stage – 16 ft ■ 18.89 (0715 CDT 22 Jun) Planned Scheduled Releases (Subject to Change) ■ Releases have been stepped up to 150,000 cfs. ■ Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) ■ 1854.8 msl (1975) Record Flow (Year) ■ 65,000 cfs (1975) Projected Record Flow (Date) ■ 150,000 cfs (Mid June)	Midnight Elevation ■ 1619.3 ft msl ■ 24-hr Change (-0.0 ft) Daily Avg. Inflow ■ 178,000 cfs (22 Jun) ■ 218,000 cfs (21 Jun) Daily Avg. Release ■ 150,300 cfs (22 Jun) ■ 153,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) ■ 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) ■ 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) ■ 1620 ft msl River Stage (Pierre) ■ 19.4 (0830 CDT 23 Jun) ■ Flood stage – 15 ft ■ 19.71 (0731 CDT 22 Jun) Planned Scheduled Releases (Subject to Change) ■ Releases will be stepped up again to 160,000 cfs by late June. ■ Reservoir is currently in the exclusive flood control zone. ■ Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) ■ 1618.7 msl (1995) Record Flow (Year) ■ 59,000 cfs (1997) Projected Record Flow (Date) ■ 160,000 cfs (Mid June)	Midnight Elevation ■ 1421.5 ft msl ■ 24-hr Change (+0.5 ft) Daily Avg. Inflow ■ 179,000 cfs (22 Jun) ■ 195,000 cfs (21 Jun) Daily Avg. Release ■ 164,600 cfs (22 Jun) ■ 162,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) ■ 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) ■ 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) ■ 1423 ft msl Planned Scheduled Releases (Subject to Change) ■ Releases have been stepped up to 165,000 cfs. ■ Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) ■ 1422.1 msl (1991) Record Flow (Date) ■ 74,000 cfs (1997) Projected Record Flow (Date) ■ 165,000 cfs (Late June)	Midnight Elevation ■ 1369.1 ft msl ■ 24-hr Change (+1.1 ft) Daily Avg. Inflow ■ 198,000 cfs (22 Jun) ■ 213,000 cfs (21 Jun) Daily Avg. Release ■ 138,300 cfs (22 Jun) ■ 139,600 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) ■ 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) ■ 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) ■ 1375 ft msl Planned Scheduled Releases (Subject to Change) ■ Releases will be stepped up to 157,000 cfs by late June. ■ Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) ■ 1372.2 msl (1997) Record Flow (Date) ■ 67,000 cfs (1997) Projected Record Flow (Date) ■ 157,000 cfs (Late June)	Midnight Elevation ■ 1208.3 ft msl ■ 24-hr Change (+0.2 ft) Daily Avg. Inflow ■ 157,000 cfs (22 Jun) ■ 159,000 cfs (21 Jun) Daily Avg. Release ■ 154,300 cfs (22 Jun) ■ 150,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) ■ 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) ■ 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) ■ 1210 ft msl Planned Scheduled Releases (Subject to Change) ■ Releases will be stepped up to 160,000 cfs by late June. ■ Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) ■ 1209.7 msl (2010) Record Flow (Date) ■ 70,000 cfs (1997) Projected Record Flow (Date) ■ 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph. Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%. Friday: Sunny, high near 76. Northwest wind 8 to 11 mph.	24-hr forecast (Riverdale, ND) Today: Sunny, high near 73. Calm wind becoming south around 5 mph. Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible. 24-hr forecast (Washburn, ND) Today: Sunny, high near 72. Calm wind.	24-hr forecast (Pierre, SD) Today: Sunny, high near 76. North northwest wind 3 to 5 mph. Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph. Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph. 24-hr forecast (Ft. Pierre, SD) Today: Sunny, high near 76. North northwest wind 3 to 5 mph. Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph. Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.	24-hr forecast (Lower Brule, SD) Today: Sunny, high near 76. North northwest wind around 7 mph. Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast. Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.	24-hr forecast (Chamberlain, SD) Today: Sunny, high near 76. North northwest wind 6 to 8 mph. Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph. Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.	24-hr forecast (Yankton, SD) Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph. Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm. Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph. 24-hr forecast (Sioux City, IA) Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph. Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm. Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

Fort Peck	Garrison	Oshe	Big Bend	Fort Randall	Gavins Point
	24-hr forecast <i>(Bismarck/Mandan, ND)</i> Today: Sunny, high near 74. Calm wind. Tonight: Mostly clear, low around 53. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.				24-hr forecast (Omaha, NE) Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph. Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm. Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

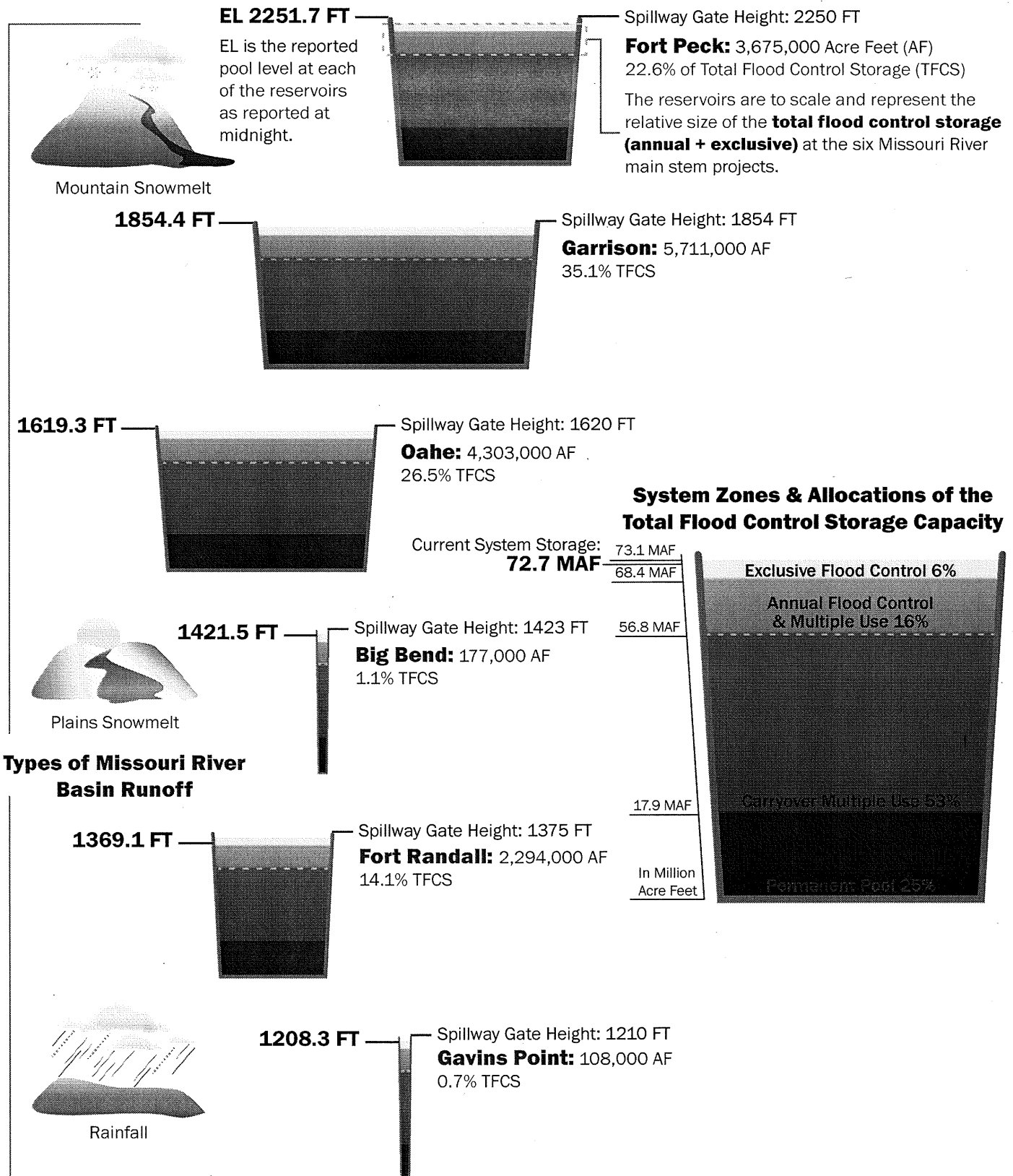
Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Main Stem Reservoir System

Midnight Elevation (EL) Forecast: June 23, 2011 (feet above mean sea level)



[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 11:57 AM
To: [REDACTED] CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED] Farhat, Jody S NWD02; [REDACTED]
[REDACTED]
[REDACTED]
Cc: [REDACTED] Farhat, Jody S NWD02; [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
Subject: RE: Missouri River Basin Water Management Division Situation Report of 6-23-11 (UNCLASSIFIED)
Attachments: Missouri River Basin Water Management Situation Report 6-23-11.docx

Classification: UNCLASSIFIED
Caveats: NONE

Any questions call me.

[REDACTED]
Northwestern Division
[REDACTED] Ofc
[REDACTED] Blkbry

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Water Management Situation Report – 6-23-11

Reservoir Conditions

The upper three reservoirs of the Missouri River Mainstem Reservoir System provide the bulk of the storage of water. All three are in their exclusive flood control zones, with Fort Peck and Garrison passing their spillway crest (continuing up on raised spillway gates) and Oahe being near its spillway crest. Table 1 summarizes the situation as of 0000 hours this morning. The relatively high inflows that have been coming into Garrison and Oahe Reservoirs will likely continue. More details on the reservoirs can be found on the daily bulletin prepared by the Missouri River Basin Water Management Division at: <http://www.nwd-mr.usace.army.mil/rcc/reports/showrep.cgi?4BULL0MR1>.

Table 1. Key Reservoir Data (through 0000 hrs 6/23/11)

Reservoir	Inflow kcfs	Outflow kcfs	Top of Spillway Gates feet msl	Current Level feet msl	24-hr Change feet
Fort Peck	46.0	59.7	2250	2251.7	-0.1
Garrison	169.0	150.5	1854	1854.4	0.1
Oahe	178.0	150.3	1620	1619.3	0.0
Big Bend	179.0	164.6	1423	1421.5	0.5
Fort Randall	198.0	138.3	1375	1369.1	1.1
Gavins Point	157.0	154.3	1210	1208.3	0.2

Based on the current level data for the upper three reservoirs, the amount of remaining storage has been changing in its distribution among the upper three, larger reservoirs. Fort Peck remains in surcharge, though outflows did exceed inflows today. With the increased releases from Fort Peck and the increase in tributary inflows, Garrison Reservoir is rising and has gone into surcharge. Oahe will not be surcharged because there are no plans at this time to use its spillway, which would result in the raised gates and the potential to surcharge that reservoir. The lower three reservoirs have much less capability to store the inflows that are coming into the Missouri River Mainstem Reservoir System, with Fort Randall Reservoir having the greater amount. The stored water has entered further into the exclusive flood control zones of Fort Randall and Gavins Point. At Big Bend, 100 percent of the exclusive flood control storage remains available. Table 2 summarizes the storage volumes of all six System reservoirs, with the last column listing the amount of exclusive flood control storage that remains as of today. Spillways are now being used at five of the six reservoirs, with no plans to use the Oahe spillway at this time. At Fort Randall, flood release tunnels will be used today for the first time ever, while heavy equipment is being removed from the emergency spillway. Routine repairs were made to the emergency spillway this week. Once the equipment is removed the spillway will be used again instead of the flood release tunnels.

Table 2. Reservoir Storage Data (through 0000 hrs 6/23/11)

Reservoir	Current	Total	Remaining	Exclusive	% Excl Left
	kAF	kAF	kAF	kAF	
Fort Peck	18,881	18,463	-418	971	-43
Garrison	23,983	23,821	-162	1,489	-11
Oahe	22,879	23,137	258	1,102	23
Big Bend	1,705	1,798	93	60	100
Fort Randall	4,828	5,418	590	985	60
Gavins Point	402	450	48	57	84

Releases from all six reservoirs are currently exceeding records prior to 2011. Table 3 provides release data for all six reservoirs to provide some perspective on the changes that will be happening over the next 2 weeks. Beginning June 17, releases from Oahe and Big Bend reservoirs were increased to 160,000 cfs to gain storage space for future rainfall events affecting Oahe and Garrison reservoirs levels. Releases from Big Bend will be further increased to 165,000 cfs to gain storage space at Garrison and Oahe reservoirs. Releases from Fort Randall and Gavin's Point reservoirs will also be increased to 157,000 cfs and 160,000 cfs respectively to gain storage space in Oahe and Garrison reservoirs. . Releases from Fort Peck have been reduced as inflows continue to decline. Full listing of the reservoir data through mid-July is available at: <http://www.nwd-mr.usace.army.mil/rcc/reports/twout.html>.

Table 3. Reservoir Release Comparisons (through 0000 hours 6/23/11)

Reservoir	Yesterday	Forecast	7 days out	14 days out	Pre-2011
		Today	30 June	07 July	Record
	kcfs	kcfs	kcfs	kcfs	kcfs
Fort Peck	59.7	60	60	55	35
Garrison	150.5	150	150	150	65
Oahe	150.3	150	160	160	59
Big Bend	164.6	165	160	160	74
Fort Randall	138.3	138	157	157	67
Gavins Point	154.3	160	160	160	70

River Conditions

Levees have been constructed by the Corps at numerous locations, resulting primarily from the releases from Garrison, Oahe, and Gavins Point Dams. Many communities along the lower Missouri River are currently experiencing Missouri River flows that are above flood stage by several feet. The flood stages currently being experienced will be exceeded as Missouri River Mainstem Reservoir System releases move through their downstream reaches and inflows from the downstream reaches and localized precipitation joins these high releases. Table 4 summarizes the current conditions as of 0600 hours this morning and the Corps' current forecast for crest stages.

Table 4. Missouri River Stage Data for 6/23/11 at 0600 CDT

Location	Flood Stage	Current Stage	Forecast Crest Stage	Date of Crest Stage
Bismarck, ND	16	18.9	20.6	mid-Jun
Pierre, SD	13	19.4	18.7	mid-Jun
Sioux City, IA	30	34.1	35-37	mid-Jun thru July
Decatur, NE	35	39	40-42	mid-Jun thru July
Omaha, NE	29	34.7	34-36	mid-Jun thru July
Nebraska City, NE	18	27.8	27-28+	mid-Jun thru July
St. Joseph, MO	17	26.2	27-32	mid-Jun thru July
Kansas City, MO	32	27.2	30-39	mid-Jun thru July
Waverly, MO	20	25.1	27-31	mid-Jun thru July
Boonville, MO	21	22.3	27-33	mid-Jun thru July
Hermann, MO	21	21.1	27-33	mid-Jun thru July

Figures 1 and 2 present the plots of the 0600 hour stages at Bismarck and Pierre, respectively. The stages at Bismarck have not reached the initial estimated levels as the Garrison Reservoir releases have increased. The reduction is likely due to the scouring of the channel as the flows are well above the levels in recent years. The stages at Pierre have closely followed the estimated levels, being just slightly over the initial estimate for crest elevation, as the upstream Oahe Reservoir releases reached the 160-kcfs level. Again Increasing releases from Oahe Reservoir to 160,000cfs will slightly increase stages at Pierre. However, the stages at both cities are still below the constructed levee crests.

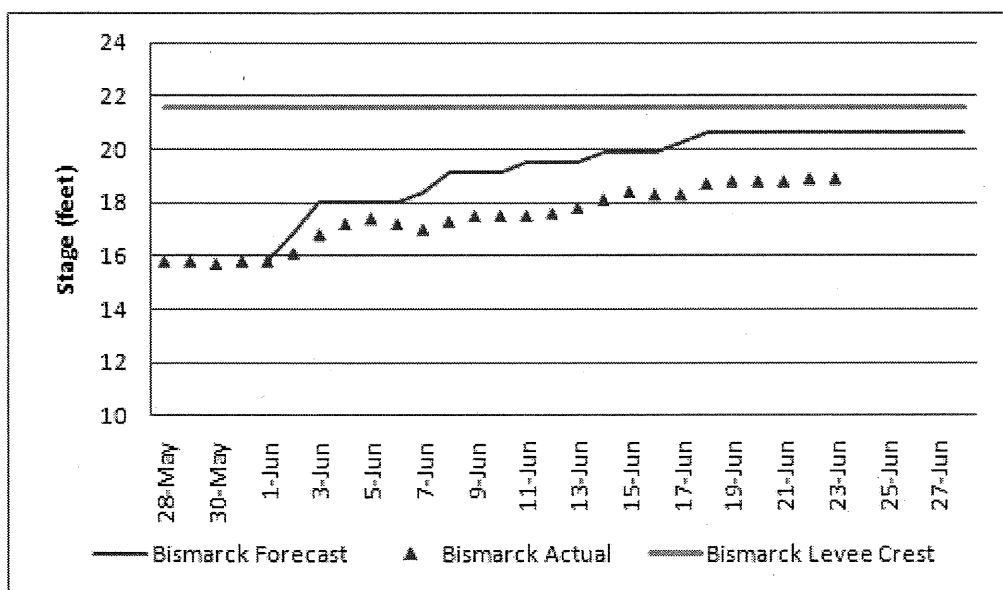


Figure 1. Missouri River stages at Bismarck, North Dakota.

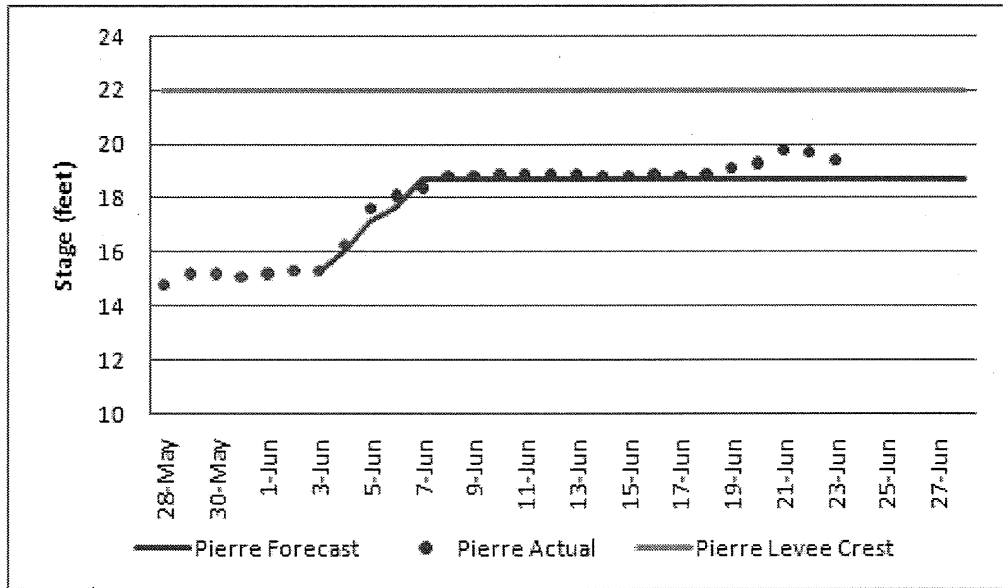


Figure 2. Missouri River stages at Pierre, South Dakota.

Information on Current Mountain Snowpack and Forecasted Rainfall

Releases from the System reservoirs are based on snowpack and rainfall forecasts in the Missouri River basin. An updated snowfall forecast was prepared on June 22; however, the Hydrometeorological Prediction Center (HPC) of NOAA prepares a rainfall forecast daily for up to the next 5 days, with an accumulated figure also presented on its website. The next 5 days do not look good as widespread light and moderate rain is forecasted for much of the Missouri River Basin. Figure 3 is the accumulated 5-day rainfall forecast for today by HPC, and Figure 4 is the June 22 mountain snowpack updated by the Corps.

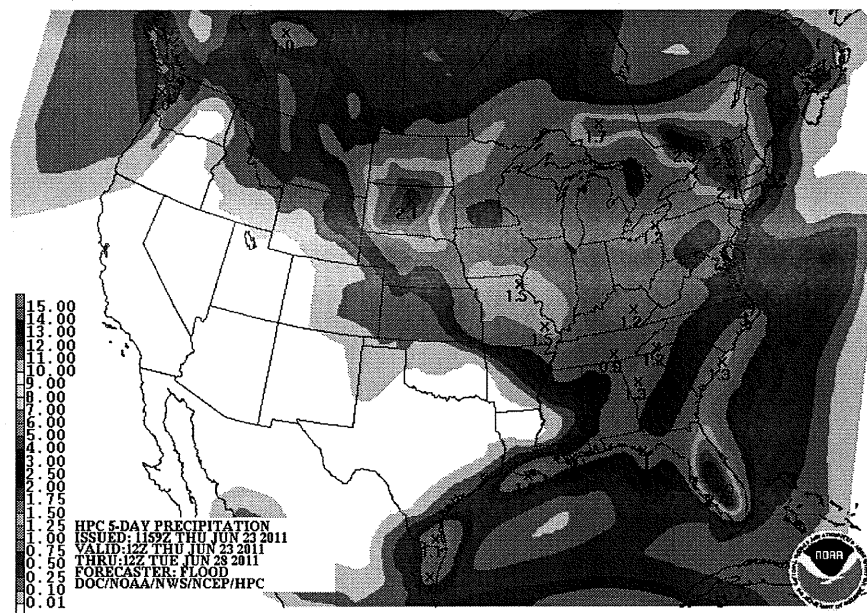


Figure 3. 5-day total QPF ending 0700 Tuesday, June 28, 2011.

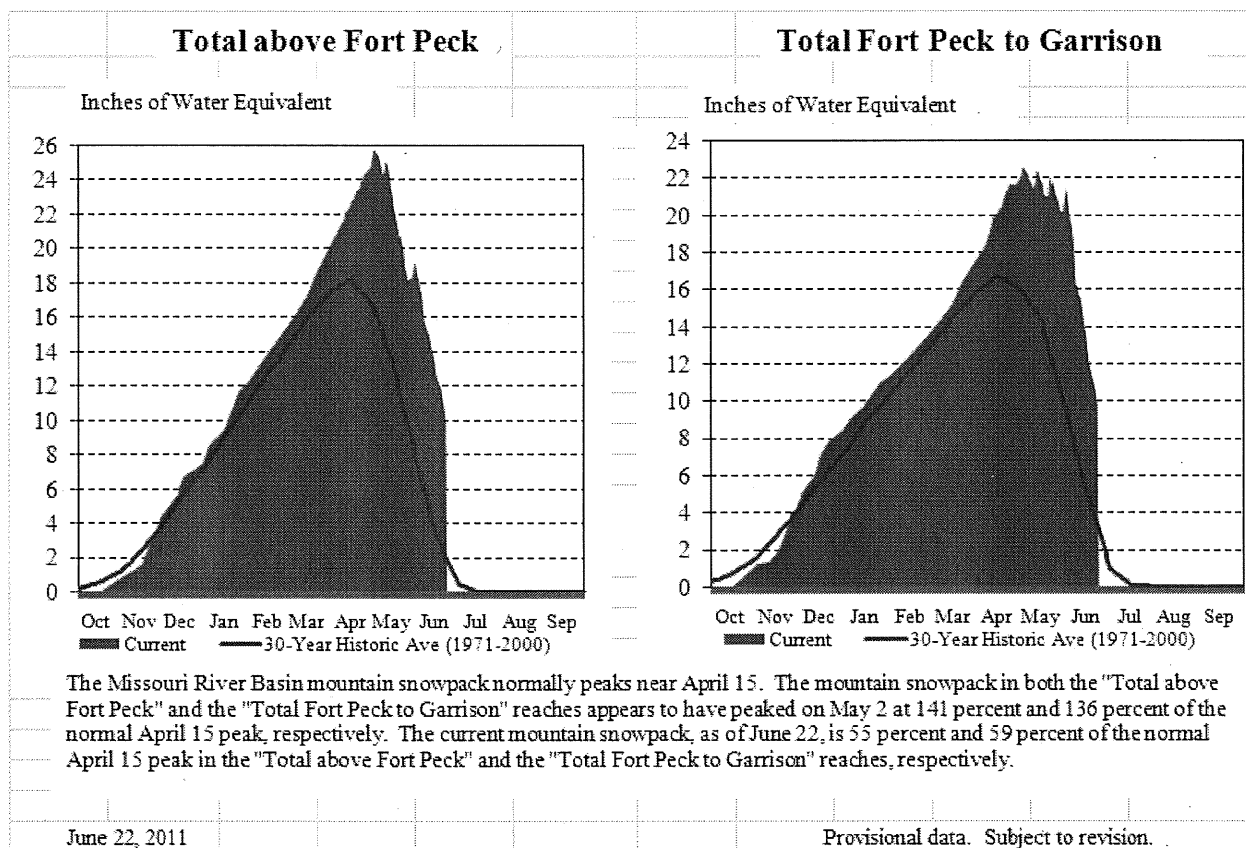


Figure 4. Missouri River basin mountain snowpack water content summary, 2010-2011 – June 22, 2011.

Current Actions and Notable Information

Levee construction has been completed to prepare for the high flows on the Missouri River that will result from the releases from the Missouri River Mainstem System reservoirs. Floodplain evacuations have been ongoing for many lower-lying areas along the lower Missouri River. The most recent of these levees, the Hamburg levee, has also been completed. The failure of levee L-575 occurred at river stages just under the maximum stage in 2010.

Figure 5 is a plot showing the Nebraska City (just across the river from the upper reaches of L-575) 0600 stages for 2010 and 2011 (through today), both years with high river stages. This figure shows that the river level is now above the 2010 maximum.

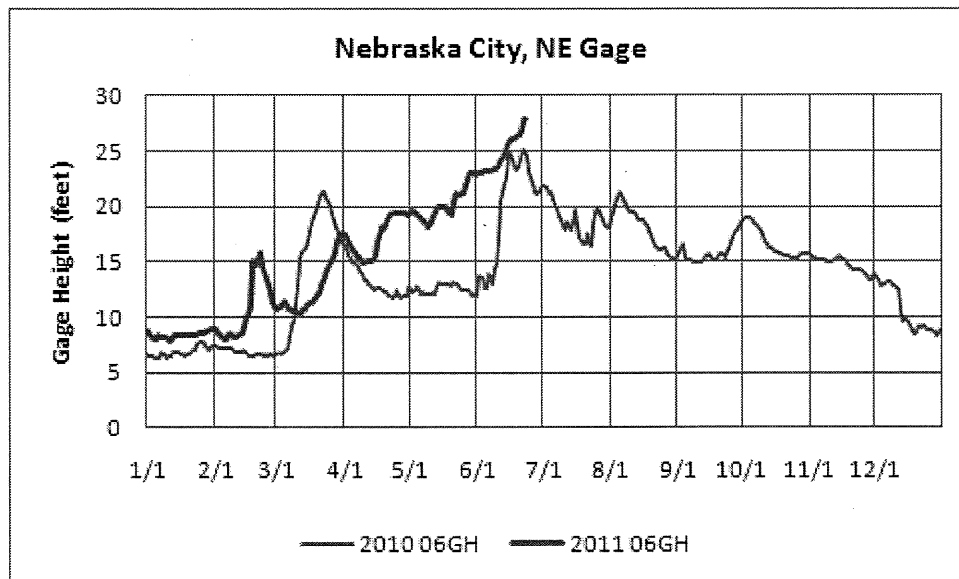


Figure 5. River stages at Nebraska City, Nebraska for 2010 and 2011.

A second levee failed at Big Lake, Missouri Monday, June 13. This location is across the river from Rulo, Nebraska. The gage plot for this location is shown below as Figure 6. Another factor, such as duration of water against the levee or back-to-back years with water against the levee appears to be playing a role in the failure of this levee as well as the levee near Hamburg.

On June 19, L-550 located north of Highway 136 in Atchison County, Missouri overtopped. Water levels at the Brownsville gauge increased approximately two feet in a 24-hour period from 5:30 a.m. 18 June to 5:30 a.m. 19 June.

Additionally, levee R-548, located south of Brownsville in Nemaha County, Nebraska also overtopped on June 19.

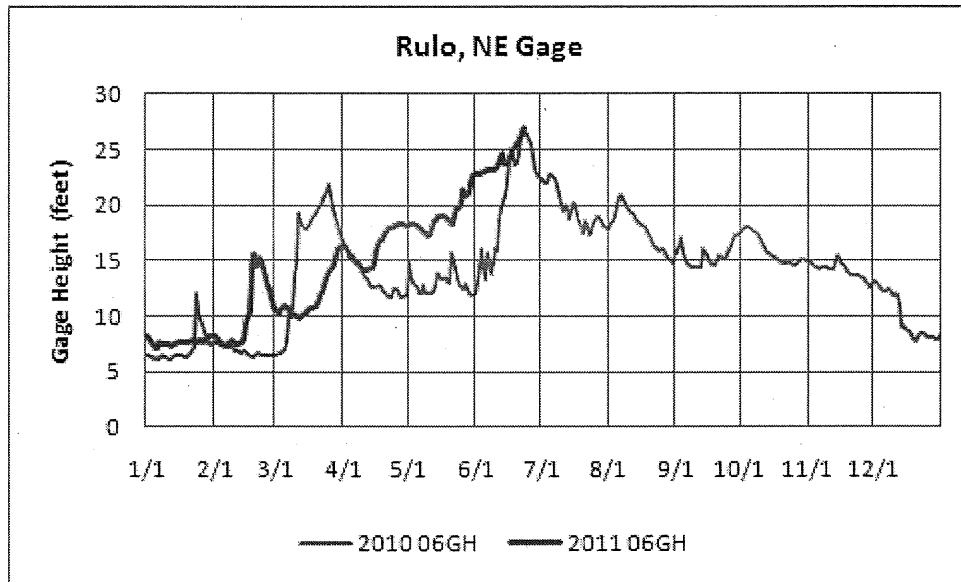


Figure 6. River stages at Rulo, Nebraska for 2010 and 2011.

Light rains fell over eastern North and South Dakota between 0700 hours yesterday and today. Figure 7 shows the amount of rain that fell in the basin and surrounding area of the Central Region of the United States.

NWS Central Region: Current 1-Day Observed Precipitation
 Valid at 6/23/2011 1200 UTC- Created 6/23/11 15:41 UTC

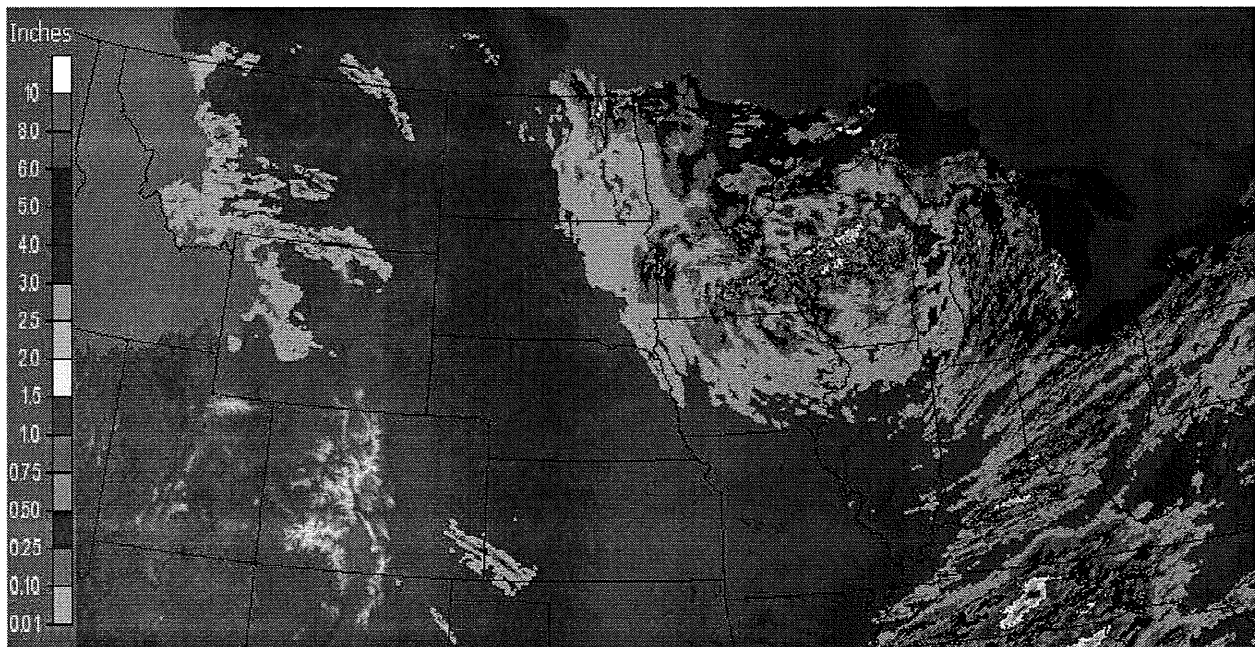


Figure 7. Rainfall on the Central Region of the United States for June 22, 2011.

[REDACTED]

From: Farmer, Monique L NWO
Sent: Thursday, June 23, 2011 11:48 AM
To: Farhat, Jody S NWD02
Subject: RE: David Hendee flood questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

OK great. Thanks.

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Thursday, June 23, 2011 11:43 AM
To: Farmer, Monique L NWO
Subject: RE: David Hendee flood questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

I can do then quickly and will cc you on the response.

Jody

-----Original Message-----

From: Farmer, Monique L NWO
Sent: Thursday, June 23, 2011 11:41 AM
To: Farhat, Jody S NWD02
Subject: RE: David Hendee flood questions (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:

Do you want to take this, or do you want me to tackle it and run it through you for an accuracy check?

-----Original Message-----

From: Hendee, David [<mailto:David.Hendee@owh.com>]
Sent: Thursday, June 23, 2011 11:31 AM
To: Farhat, Jody S NWD02; Farmer, Monique L NWO
Subject: David Hendee flood questions

Just a few questions to plug a few holes in my fact-gathering:

1. How much water is flowing past Omaha now?

2. How much water is forecast to flow past Omaha on Sunday (when my story is scheduled to be published)?

(I assume the current and Sunday totals would be the Gavin Point releases plus water contributed by downstream tributaries, correct?)

3. Is the June 1 (or so) runoff forecast of 54.6 maf unchanged so far this month? If it has changed, what is the new number?

4. Technical question: Will all of the runoff this year have to be evacuated from the system this year? Is that the intent?

5. Is there a priority ranking for the eight authorized purposes? Or can they be listed in any order, with flood control at the top?

6. What is the average peak release for Gavins Point Dam since it started operations?

7. The previous record peak release for Gavins Point was 70,000 cfs, right? Is 70,000 the exact number, or was it 69,590 cfs or 70,435 cfs or whatever?

I'll probably have a few more but this is the latest off the top of my head.

Thanks much.

David Hendee

Staff Writer

Omaha World-Herald

402-444-1127

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 11:47 AM
To: Farhat, Jody S NWD02
Cc: Blechinger, Erik T NWO; [REDACTED]
Subject: RE: CONGRESSIONAL: Senator Thune question about reservoir releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Thanks Jody. I will make the suggested change and send to David.

[REDACTED]

-----Original Message-----
From: Farhat, Jody S NWD02
Sent: Thursday, June 23, 2011 10:45 AM
To: [REDACTED]
Cc: Blechinger, Erik T NWO; [REDACTED]
Subject: RE: CONGRESSIONAL: Senator Thune question about reservoir releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The only change I would make is in the first paragraph, second sentence; I would change the reference from "March" to "mid-May".

I definitely agree with the approach to stick to the talking points. We don't have time to run what-if scenarios now.

Jody

-----Original Message-----
From: [REDACTED]
Sent: Thursday, June 23, 2011 9:43 AM
To: Farhat, Jody S NWD02
Cc: Blechinger, Erik T NWO; [REDACTED]
Subject: CONGRESSIONAL: Senator Thune question about reservoir releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:
David Schwietert (Thune, SD) called me yesterday and followed up with an e-mail message relaying the following questions and dialogue.

QUESTION:

Senator Thune is curious what the modeling would show if the Corps had released additional water from Garrison/Oahe starting at the beginning of this year.

For instance, if both reservoirs had releases at their record flows (65,000 cfs and 59,000 cfs) what would that have done to free up additional space in the flood control zone.

Something tells me that even if these elevated releases occurred between January and May, there would still need to be record releases out of both dams (higher than the previous record flows) to accommodate the high precipitation/runoff.

Above all, I think this would help to show what today's situation would be if such releases were put in place from Jan-May. Something tells me that based on the amount of precipitation/runoff that we've witnessed, it would still have likely required 100+ cfs out of both dams.

Based on the talking points on the MRJIC SharePoint from 8 June, here is my proposed response but would like your thoughts and/or edits before sending it.

DRAFT ANSWER:

We have not analyzed what effect increasing the releases earlier in the year would have had on the ability of the system to store additional flood flows. In addition, at no time during the January to March timeframe did we have weather forecast information indicating that doing so would be necessary in order to avoid record releases. Immediately after this rainfall event we began incrementally stepping up our releases in a controlled manner, while still allowing people downstream to prepare for record releases and a record runoff water year.

Releases from the Missouri River dams last fall and throughout the winter of 2010-11 were above normal. All flood waters from 2010 were released in time for the 2011 runoff season. 2010 was the third highest water year on record in the Missouri River Basin.

On 28 January 2011, the full flood capacity of the Missouri River reservoir system was available for this year's runoff season (reservoir was at desired 56.8 Million Acre Feet). At that point, and all the way through the first of May, we had no reason to think we needed to increase releases beyond normal levels.

The current record high releases we are experiencing has been due to combination of precipitation events: 1) plains snow; 2) extraordinary rainfall in eastern Montana, Northern Wyoming and the western Dakota in one month (300% of normal in May); and 3) additional mountain snowpack accumulation to record levels in May combined with a delayed melt pattern.

The May 2011 runoff into the Missouri River Basin above Sioux City was 10.5 MAF - compared to a normal May runoff based on historical records is only 3.3 MAF. To put this in some perspective, 10.5 MAF would be enough water to cover the entire state of Iowa in over 3 inches of water. This was the second highest single month of runoff since 1898. The only higher month was in 1952 with 13.2 MAF in April.

I know Kayla had sent a response to a similar question from Senator Johanns back on 10 June. I thought that for this response I'd stick more to the talking points even though I did make a few modifications. Let me know if this meets with your approval or if you have some suggested revisions.

Thanks,


Classification: UNCLASSIFIED

[REDACTED]

From: U.S. Army Corps of Engineers Omaha District [eileen.l.williamson@usace.army.mil]
Sent: Thursday, June 23, 2011 11:37 AM
To: Farhat, Jody S NWD02
Subject: Riverwatch June 23, 2011 #2011MoRivFlood
Attachments: 623NR-RIVERWATCH6-11.pdf

Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)

Midnight Elevation

- * 2251.7 ft msl
- * 24-hr Change (-0.1 ft)

Daily Avg. Inflow

- * 46,000 cfs (22 Jun)
- * 47,000 cfs (21 Jun)

Daily Avg. Release

- * 59,700 cfs (22 Jun)
- * 60,200 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)

- * 2250 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been decreased to 60,000 cfs.
- * Reservoir is currently using surcharge storage above the exclusive flood control zone.

Record Pool Elevation (Year)

- * 2251.6 msl (1975)

Record Flow (Year)

- * 35,000 cfs (1975)

Projected Record Flow (Date)

- * 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

- * 1854.4 ft msl
- * 24-hr Change (+0.1 ft)

Daily Avg. Inflow

- * 169,000 cfs (22 Jun)
- * 192,000 cfs (21 Jun)

Daily Avg. Release

- * 150,500 cfs (22 Jun)

* 150,400 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1850 ft msl - 1854 ft msl

Top of Spillway Gates(closed)

* 1854 ft msl

River Stage (Bismarck)

* 18.88 (0845 CDT 23 Jun)

* Flood stage - 16 ft

* 18.89 (0715 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

* Reservoir is currently using surcharge storage above the exclusive flood control zone.

* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

* 1854.8 msl (1975)

Record Flow (Year)

* 65,000 cfs (1975)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

* 1619.3 ft msl

* 24-hr Change (-0.0 ft)

Daily Avg. Inflow

* 178,000 cfs (22 Jun)

* 218,000 cfs (21 Jun)

Daily Avg. Release

* 150,300 cfs (22 Jun)

* 153,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1617 ft msl - 1620 ft msl

Top of Spillway Gates(closed)

* 1620 ft msl

River Stage (Pierre)

* 19.4 (0830 CDT 23 Jun)

* Flood stage - 15 ft

* 19.71 (0731 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up again to 160,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.
- * Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1421.5 ft msl
- * 24-hr Change (+0.5 ft)

Daily Avg. Inflow

- * 179,000 cfs (22 Jun)
- * 195,000 cfs (21 Jun)

Daily Avg. Release

- * 164,600 cfs (22 Jun)
- * 162,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates(closed)

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 165,000 cfs.
- * Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

- * 1422.1 msl (1991)

Record Flow (Date)

- * 74,000 cfs (1997)

Projected Record Flow (Date)

- * 165,000 cfs (Late June)

Fort Randall (In operation since 1953)

Midnight Elevation

- * 1369.1 ft msl
- * 24-hr Change (+1.1 ft)

Daily Avg. Inflow

- * 198,000 cfs (22 Jun)
- * 213,000 cfs (21 Jun)

Daily Avg. Release

- * 138,300 cfs (22 Jun)
- * 139,600 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1365 ft msl - 1375 ft msl

Top of Spillway Gates(closed)

- * 1375 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 157,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

- * 1372.2 msl (1997)

Record Flow (Date)

- * 67,000 cfs (1997)

Projected Record Flow (Date)

- * 157,000 cfs (Late June)

Gavins Point (In operation since 1955)

Midnight Elevation

- * 1208.3 ft msl
- * 24-hr Change (+0.2 ft)

Daily Avg. Inflow

- * 157,000 cfs (22 Jun)
- * 159,000 cfs (21 Jun)

Daily Avg. Release

- * 154,300 cfs (22 Jun)
- * 150,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1208 ft msl - 1210 ft msl

Top of Spillway Gates(closed)

- * 1210 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up to 160,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

- * 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation Source of information:

<http://www.nwd-mr.usace.army.mil/rcc> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997573x-1592555>>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph.

Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%.

Friday: Sunny, high near 76. Northwest wind 8 to 11 mph.

24-hr forecast (Williston, ND)

Today: Mostly sunny, high near 76. South wind 6 to 11 mph.

Tonight: 50% chance of showers and t-storms after 1am. Mostly cloudy, low around 58. Southeast wind 10 to 14 mph, with gusts as high as 20 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

Friday: 50% chance of showers and t-storms. Mostly cloudy, high near 74. South wind 6 to 8 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

24-hr forecast (Riverdale, ND)

Today: Sunny, high near 73. Calm wind becoming south around 5 mph.

Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Washburn, ND)

Today: Sunny, high near 72. Calm wind.

Tonight: Mostly clear, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 70. South wind 6 to 11 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: Sunny, high near 74. Calm wind.

Tonight: Mostly clear, low around 53. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Lower Brule, SD)

Today: Sunny, high near 76. North northwest wind around 7 mph.

Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.

24-hr forecast (Chamberlain, SD)

Today: Sunny, high near 76. North northwest wind 6 to 8 mph.

Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph.

Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.

24-hr forecast (Yankton, SD)

Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph.

Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm.

Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph.

24-hr forecast (Sioux City, IA)

Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph.

Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm.

Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

24-hr forecast (Omaha, NE)

Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph.

Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm.

Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997572x-2112816>>

Internet: <http://www.nwo.usace.army.mil> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997571x-115478>>
Facebook: <http://www.facebook.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997570x-635740>>
Twitter: <http://www.twitter.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997569x-1156002>>
YouTube: <http://www.youtube.com/OmahaUSACE> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997568x-1676264>>
Flickr: <http://www.flickr.com/photos/omahausace> <<http://USACEARMY.pr-optout.com/Url.aspx?520028x1997567x-2196526>>

<<http://us.vocuspr.com/Url.aspx?520028x1997574x-1072294>>

If you would rather not receive future communications from U.S. Army Corps of Engineers Omaha District, let us know by clicking here. <<http://USACEARMY.pr-optout.com/OptOut.aspx?520028x24691x318402x3x1875268x24000x6&Email=Jody.S.Farhat%40usace.army.mil>>

U.S. Army Corps of Engineers Omaha District, 1616 Capitol Ave, Omaha, NE 68102 United States



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)	Garrison (In operation since 1955)	Osage (In operation since 1962)	Big Bend (In operation since 1964)	Fort Randall (In operation since 1953)	Gavins Point (In operation since 1955)
Midnight Elevation 2251.7 ft msl 24-hr Change (-0.1 ft) Daily Avg. Inflow 46,000 cfs (22 Jun) 47,000 cfs (21 Jun) Daily Avg. Release 59,700 cfs (22 Jun) 60,200 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 2234 ft msl – 2246 ft msl Exclusive Flood Ctrl Zone (Elevation) 2246 ft msl – 2250 ft msl Top of Spillway Gates (closed) 2250 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been decreased to 60,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. Record Pool Elevation (Year) 2251.6 msl (1975) Record Flow (Year) 35,000 cfs (1975) Projected Record Flow (Date) 65,000 cfs (Mid June)	Midnight Elevation 1854.4 ft msl 24-hr Change (+0.1 ft) Daily Avg. Inflow 169,000 cfs (22 Jun) 192,000 cfs (21 Jun) Daily Avg. Release 150,500 cfs (22 Jun) 150,400 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1837.5 ft msl – 1850 ft msl Exclusive Flood Ctrl Zone (Elevation) 1850 ft msl – 1854 ft msl Top of Spillway Gates (closed) 1854 ft msl River Stage (Bismarck) 18.88 (0845 CDT 23 Jun) - Flood stage – 16 ft 18.89 (0715 CDT 22 Jun) Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 150,000 cfs. - Reservoir is currently using surcharge storage above the exclusive flood control zone. - Spillway gates are being used to pass floodwaters. Record Pool Elevation (Year) 1854.8 msl (1975) Record Flow (Year) 65,000 cfs (1975) Projected Record Flow (Date) 150,000 cfs (Mid June)	Midnight Elevation 1619.3 ft msl 24-hr Change (-0.0 ft) Daily Avg. Inflow 178,000 cfs (22 Jun) 218,000 cfs (21 Jun) Daily Avg. Release 150,300 cfs (22 Jun) 153,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1607.5 ft msl – 1620 ft msl Exclusive Flood Ctrl Zone (Elevation) 1617 ft msl – 1620 ft msl Top of Spillway Gates (closed) 1620 ft msl River Stage (Pierre) 19.4 (0830 CDT 23 Jun) - Flood stage – 15 ft 19.71 (0731 CDT 22 Jun) Planned Scheduled Releases (Subject to Change) - Releases will be stepped up again to 160,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. - Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet. Record Pool Elevation (Year) 1618.7 msl (1995) Record Flow (Year) 59,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Mid June)	Midnight Elevation 1421.5 ft msl 24-hr Change (+0.5 ft) Daily Avg. Inflow 179,000 cfs (22 Jun) 195,000 cfs (21 Jun) Daily Avg. Release 164,600 cfs (22 Jun) 162,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1420 ft msl – 1423 ft msl Exclusive Flood Ctrl Zone (Elevation) 1422 ft msl – 1423 ft msl Top of Spillway Gates (closed) 1423 ft msl Planned Scheduled Releases (Subject to Change) - Releases have been stepped up to 165,000 cfs. - Reservoir will remain essentially level at 1420 feet. Record Pool Elevation (Year) 1422.1 msl (1991) Record Flow (Date) 74,000 cfs (1997) Projected Record Flow (Date) 165,000 cfs (Late June)	Midnight Elevation 1369.1 ft msl 24-hr Change (+1.1 ft) Daily Avg. Inflow 198,000 cfs (22 Jun) 213,000 cfs (21 Jun) Daily Avg. Release 138,300 cfs (22 Jun) 139,600 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1350 ft msl – 1375 ft msl Exclusive Flood Ctrl Zone (Elevation) 1365 ft msl – 1375 ft msl Top of Spillway Gates (closed) 1375 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 157,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1372.2 msl (1997) Record Flow (Date) 67,000 cfs (1997) Projected Record Flow (Date) 157,000 cfs (Late June)	Midnight Elevation 1208.3 ft msl 24-hr Change (+0.2 ft) Daily Avg. Inflow 157,000 cfs (22 Jun) 159,000 cfs (21 Jun) Daily Avg. Release 154,300 cfs (22 Jun) 150,900 cfs (21 Jun) Annual Flood Ctrl & Multi-Use Zone (Elevation) 1204.5 ft msl – 1210 ft msl Exclusive Flood Ctrl Zone (Elevation) 1208 ft msl – 1210 ft msl Top of Spillway Gates (closed) 1210 ft msl Planned Scheduled Releases (Subject to Change) - Releases will be stepped up to 160,000 cfs by late June. - Reservoir is currently in the exclusive flood control zone. Record Pool Elevation (Year) 1209.7 msl (2010) Record Flow (Date) 70,000 cfs (1997) Projected Record Flow (Date) 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation
Source of information: <http://www.nwd-mr.usace.army.mil/rcc>



US Army Corps
of Engineers
Oahe District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

Fort Peck	Garrison	Oahe	Big Bend	Fort Randall	Gavins Point
24-hr forecast (Glasgow, MT) Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph. Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%. Friday: Sunny, high near 76. Northwest wind 8 to 11 mph. 24-hr forecast (Williston, ND) Today: Mostly sunny, high near 76. South wind 6 to 11 mph. Tonight: 50% chance of showers and t-storms after 1am. Mostly cloudy, low around 58. Southeast wind 10 to 14 mph, with gusts as high as 20 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms. Friday: 50% chance of showers and t-storms. Mostly cloudy, high near 74. South wind 6 to 8 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.	24-hr forecast (Riverdale, ND) Today: Sunny, high near 73. Calm wind becoming south around 5 mph. Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible. 24-hr forecast (Washburn, ND) Today: Sunny, high near 72. Calm wind. Tonight: Mostly clear, low around 54. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 70. South wind 6 to 11 mph. New rainfall amounts 0.25 to 0.5 inch possible.	24-hr forecast (Pierre, SD) Today: Sunny, high near 76. North northwest wind 3 to 5 mph. Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph. Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph. 24-hr forecast (Ft. Pierre, SD) Today: Sunny, high near 76. North northwest wind 3 to 5 mph. Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph. Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.	24-hr forecast (Lower Brule, SD) Today: Sunny, high near 76. North northwest wind around 7 mph. Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast. Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.	24-hr forecast (Chamberlain, SD) Today: Sunny, high near 76. North northwest wind 6 to 8 mph. Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph. Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.	24-hr forecast (Yankton, SD) Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph. Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm. Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph. 24-hr forecast (Sioux City, IA) Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph. Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm. Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

Source of information: <http://www.weather.gov>



US Army Corps
of Engineers
Omaha District

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

Fort Peck	Garrison	Omaha	Big Bend	Fort Randall	Gavins Point
	24-hr forecast <i>(Bismarck/Mandan, ND)</i> Today: Sunny, high near 74. Calm wind. Tonight: Mostly clear, low around 53. Southeast wind around 8 mph. Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.				24-hr forecast (Omaha, NE) Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph. Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm. Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

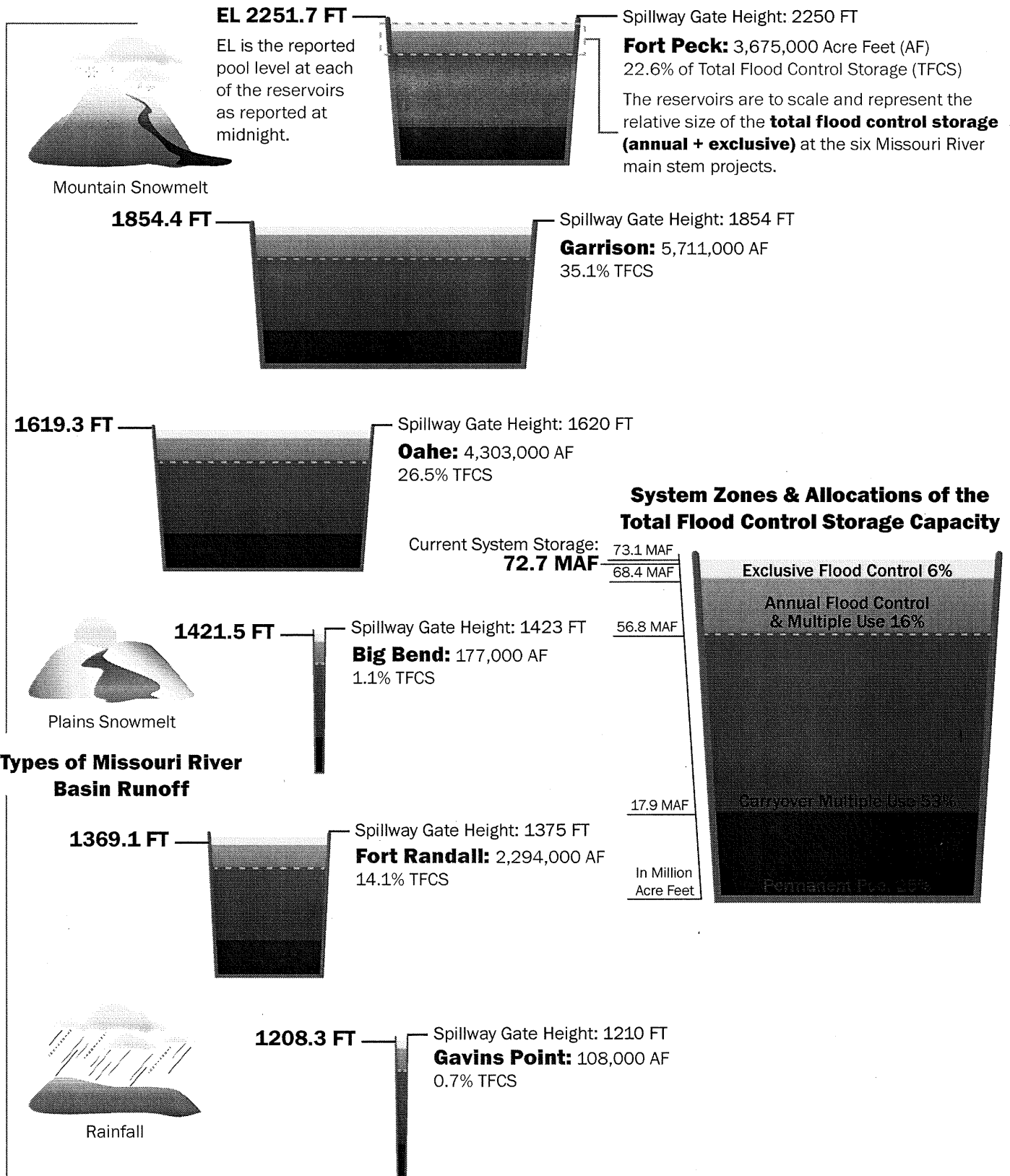
Twitter: <http://www.twitter.com/OmahaUSACE>

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Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Main Stem Reservoir System

Midnight Elevation (EL) Forecast: June 23, 2011 (feet above mean sea level)



From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 11:40 AM
To: Farhat, Jody S NWD02
Subject: Upper Dakota Tribs Forecast

ZCZC MKCRVFUDT DEF
TTAA00 KKRF DDHMM
RVFUDT

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1635Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPRDAK_RES

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: *****
: INCORPORATES 6/22/2011 USACE RESERVOIR REGULATION FORECAST
: *****

:
:
:
:
:
:GARRISON RES ND - MISSOURI RIVER RESERVOIR INFLOW FORECAST

:LATEST ESTIMATED DISCHARGE 188.15 KCFS AT 1200Z ON 0623

.ER GARN8 20110623 Z DC201106231635/DH18/QIIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	186.59/	184.82/	181.74
.E2 :0624:/	178.60/	175.18/	171.62/	167.86
.E3 :0625:/	164.02/	160.55/	157.60/	154.91
.E4 :0626:/	152.40/	150.10/	148.22/	146.87
.E5 :0627:/	146.02/	145.54/	145.34/	145.34
.E6 :0628:/	145.51/	145.86/	146.43/	147.21
.E7 :0629:/	148.08/	148.93/	149.59/	149.91
.E8 :0630:/	149.73/	148.96/	147.90/	146.72
.E9 :0701:/	144.44/	142.19/	140.20/	137.79
.E10 :0702:/	135.88/	133.81/	132.70/	131.81
.E11 :0703:/	131.50/	130.94/	130.93/	130.63
.E12 :0704:/	130.84/	130.70/	131.00/	130.89
.E13 :0705:/	131.45/	131.63/	131.01/	130.25
.E14 :0706:/	129.30/	128.18/	126.92/	125.58
.E15 :0707:/	124.25			

: *****
: COMMENT

[REDACTED]

From: Anderson, G Witt NWD
Sent: Thursday, June 23, 2011 11:32 AM
To: Farhat, Jody S NWD02
Subject: Re: Porter Response (UNCLASSIFIED)

Can you forward just the ltr attachment w/o the email string? Tks

Message sent via my BlackBerry Wireless Device

----- Original Message -----

From: Farhat, Jody S NWD02
To: Anderson, G Witt NWD
Sent: Thu Jun 23 08:25:12 2011
Subject: Porter Response (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Witt, here's the signed porter response.

Jody

-----Original Message-----

From: Farhat, Jody S NWD02
Sent: Saturday, June 18, 2011 5:54 PM
To: McMahon, John R BG NWD
Subject: Fw: North Dakota Legislative Assembly (UNCLASSIFIED)

----- Original Message -----

From: Farhat, Jody S NWD02
To: Ruch, Robert J COL NWO; Anderson, G Witt NWD; Blechinger, Erik T NWO; [REDACTED]
Sent: Sat Jun 18 10:58:04 2011
Subject: RE: North Dakota Legislative Assembly (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir - Here is a pdf of the signed response.

Jody

-----Original Message-----

From: Ruch, Robert J COL NWO
Sent: Saturday, June 18, 2011 12:43 PM
To: Anderson, G Witt NWD; Blechinger, Erik T NWO; [REDACTED]
Cc: Farhat, Jody S NWD02
Subject: RE: North Dakota Legislative Assembly (UNCLASSIFIED)

I still don't think I have been provided a copy of the reply. Does anyone have it?

COL R

-----Original Message-----

From: Anderson, G Witt NWD
Sent: Tuesday, June 14, 2011 8:41 AM
To: Blechinger, Erik T NWO; [REDACTED]
Cc: Ruch, Robert J COL NWO; Farhat, Jody S NWD02
Subject: FW: North Dakota Legislative Assembly (UNCLASSIFIED)
Importance: High

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----

From: Ruch, Robert J COL NWO
Sent: Tuesday, June 14, 2011 6:34 AM
To: Anderson, G Witt NWD
Subject: FW: North Dakota Legislative Assembly (UNCLASSIFIED)

Witt,

Will this reply be going out today?

V/R,

COL Bob Ruch
Commander
Omaha District, USACE
(402) 995-2001
<https://www.nwo.usace.army.mil/>

[REDACTED] do you and NWO have the action to close on bullet 4, so we can get this out?

Thanks,

Witt

-----Original Message-----

From: [REDACTED]
Sent: Friday, June 10, 2011 10:48 AM
To: Ruch, Robert J COL NWO; Thomas, Kimberly S NWO; [REDACTED]
Cc: [REDACTED]
Subject: North Dakota Legislative Assembly (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

During the City update today Congressman Rick Berg presented me with the attached RFI regarding current Missouri River flooding. He wanted me to follow up on how long it would take to get a response to the RFI, I responded that I would contact you and provide a suspense. Also the Mayor of Bismarck turned over the facilitator responsibilities of the

daily meeting to the Bismarck EOC Director. Therefore future USACE presence at the daily meeting is not required. However I did explain to the Director that we would be available if any questions or issues came about. Subject to your approval I will discontinue presenting at the City meeting and provide the City with daily input.

V/r

[REDACTED]
Disaster Program Manager
HQ-USACE Contingency Operations Directorate
441 G Street NW
Washington, DC 20314
[REDACTED] 8 Blackberry
[REDACTED] Cell
[REDACTED] [\[REDACTED\]@usace.army.mil](mailto:[REDACTED]@usace.army.mil)

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 11:30 AM
To: Farhat, Jody S NWD02
Subject: Yellowstone Forecast

ZCZC MKCRVFYEL DEF
TTAA00 KKRF DDHMM
RVFYEL

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1627Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS YELLOWSTONE WITH EXTRAS

: ==> This forecast includes obsd precip & 24 hours of QPF <==

:***** CORRECTED REVISED FORECAST *****

: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

: Please note ... Crest forecasts provided are based on 14 days of
: forecast temperatures and should not be assumed to be the absolute
: crests for the snowmelt season.

RIVER/STATION	FS	TDY	F O R E C A S T
TONGUE RIVER			
DAYTON MT	6.0	4.8	
DECKER MT 1SE		7.5	CREST NEAR 7.6 FT 06/23 PM 2nd CREST NEAR 7.7 FT 06/25 PM
BIRNEY MT	6.0	6.1	CREST NEAR 6.7 FT 06/25 AM 2nd CREST NEAR 6.2 FT 06/27 PM
ASHLAND MT	9.5	9.9E	CREST NEAR 9.9 FT 06/23 PM 2nd CREST NEAR 10.1 FT 06/26 PM

:
:
:
:
:
: DAYTON MT - TONGUE RIVER HSA - BYZ
: FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.5

:
: LATEST STAGE 4.8 FT AT 1600Z ON 0623
: ER DAYW4 20110623 Z DC201106231627/DH18/HGIFF/DIH6
: QPF FCST 12Z 18Z 0Z 6Z
: E1 :0623: / 4.8/ 4.7/ 5.1
: E2 :0624:/ 5.0/ 4.8/ 4.7/ 5.0
: E3 :0625:/ 5.0/ 5.0/ 4.9/ 4.8
: E4 :0626:/ 4.8/ 4.8/ 4.8/ 4.7
: E5 :0627:/ 4.7/ 4.8/ 4.7/ 4.7
: E6 :0628:/ 4.7

```

:
:DECKER MT 1SE - TONGUE RIVER      HSA - BYZ
:
:
:LATEST STAGE 7.5 FT AT 1545Z ON 0623
.AR : CREST : DSLM8 20110624 Z DC201106231627/DH00/HGIFFX 7.6 .AR : CREST : DSLM8 20110625 Z
DC201106231627/DH00/HGIFFX 7.7 .AR : CREST : DSLM8 20110626 Z DC201106231627/DH06/HGIFFX 7.4
.AR : CREST : DSLM8 20110629 Z DC201106231627/DH18/HGIFFX 6.5 .AR : CREST : DSLM8 20110630 Z
DC201106231627/DH18/HGIFFX 6.6 .AR : CREST : DSLM8 20110702 Z DC201106231627/DH12/HGIFFX 6.5
.AR : CREST : DSLM8 20110703 Z DC201106231627/DH18/HGIFFX 6.5 .AR : CREST : DSLM8 20110704 Z
DC201106231627/DH18/HGIFFX 6.6 .AR : CREST : DSLM8 20110705 Z DC201106231627/DH12/HGIFFX 6.6
.ER DSLM8      20110623 Z DC201106231627/DH18/HGIFFX/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      7.5/      7.6/      7.6
.E2 :0624:/      7.5/      7.6/      7.7/      7.6
.E3 :0625:/      7.3/      7.3/      7.4/      7.4
.E4 :0626:/      7.3/      7.2/      7.0/      6.9
.E5 :0627:/      6.9/      6.8/      6.7/      6.7
.E6 :0628:/      6.6
:
:BIRNEY MT - TONGUE RIVER      HSA - BYZ
:FLOOD STAGE 6.0      FCST ISSUANCE STAGE 5.0
:
:LATEST STAGE 6.1 FT AT 1530Z ON 0623
.AR : CREST : BNYM8 20110625 Z DC201106231627/DH12/HGIFFX 6.7 .AR : CREST : BNYM8 20110627 Z
DC201106231627/DH00/HGIFFX 6.2 .AR : CREST : BNYM8 20110701 Z DC201106231627/DH12/HGIFFX 5.4
.AR : CREST : BNYM8 20110705 Z DC201106231627/DH18/HGIFFX 5.4 .AR : CREST : BNYM8 20110706 Z
DC201106231627/DH06/HGIFFX 5.4 .AR : CREST : BNYM8 20110709 Z DC201106231627/DH06/HGIFFX 5.3
: FALL BELOW FLOOD STAGE ON 06/27/2011 AROUND 14Z
.ER BNYM8      20110623 Z DC201106231627/DH18/HGIFFX/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      6.1/      6.1/      6.2
.E2 :0624:/      6.3/      6.4/      6.6/      6.6
.E3 :0625:/      6.7/      6.7/      6.6/      6.4
.E4 :0626:/      6.2/      6.2/      6.2/      6.2
.E5 :0627:/      6.1/      5.9/      5.8/      5.7
.E6 :0628:/      5.7
:
:ASHLAND MT - TONGUE RIVER      HSA - BYZ
:FLOOD STAGE 9.5      FCST ISSUANCE STAGE 8.5
:
:LATEST ESTIMATED STAGE 9.9 FT AT 1200Z ON 0623 .AR : CREST : ASLM8 20110623 Z
DC201106231627/DH18/HGIFFX 9.9 .AR : CREST : ASLM8 20110626 Z DC201106231627/DH18/HGIFFX 10.1
.AR : CREST : ASLM8 20110702 Z DC201106231627/DH18/HGIFFX 9.0 .AR : CREST : ASLM8 20110707 Z
DC201106231627/DH00/HGIFFX 9.0
: FALL BELOW FLOOD STAGE ON 06/29/2011 AROUND 3Z .AR ASLM8 20110623 DH1200/HGIPX 9.90E
.ER ASLM8      20110623 Z DC201106231627/DH18/HGIFFX/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      9.9/      9.8/      9.8
.E2 :0624:/      9.8/      9.7/      9.7/      9.8
.E3 :0625:/      9.8/      9.9/      10.0/      10.1
.E4 :0626:/      10.1/      10.1/      10.1/      10.0
.E5 :0627:/      9.9/      9.8/      9.8/      9.8
.E6 :0628:/      9.7
:
:MILES CITY MT - PUMPKIN CREEK      HSA - BYZ
:FLOOD STAGE 11.0      FCST ISSUANCE STAGE 10.0

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:
:LATEST STAGE 4.7 FT AT 1545Z ON 0623
.ER PMKM8      20110623 Z DC201106231627/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      4.7/      4.7/      4.7
.E2 :0624:/      4.7/      4.7/      4.7/      4.7
.E3 :0625:/      4.7/      4.7/      4.7/      4.7
.E4 :0626:/      4.7/      4.7/      4.7/      4.7
.E5 :0627:/      4.7/      4.7/      4.7/      4.7
.E6 :0628:/      4.7
:
:MILES CITY MT - TONGUE RIVER      HSA - BYZ
:FLOOD STAGE 11.0      FCST ISSUANCE STAGE 9.0
:
:LATEST STAGE 8.1 FT AT 1600Z ON 0623
.ER MICM8      20110623 Z DC201106231627/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      8.0/      7.9/      7.8
.E2 :0624:/      7.7/      7.7/      7.6/      7.6
.E3 :0625:/      7.6/      7.5/      7.5/      7.4
.E4 :0626:/      7.4/      7.4/      7.4/      7.4
.E5 :0627:/      7.5/      7.6/      7.7/      7.7
.E6 :0628:/      7.8
:*****
:COMMENT
:
:
:
:
$$
:tea
:...END of MESSAGE...

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[REDACTED]

From: Ruch, Robert J COL NWO
Sent: Thursday, June 23, 2011 11:21 AM
To: McMahon, John R BG NWD
Cc: Anderson, G Witt NWD; [REDACTED]; Anderson, G Witt NWD; Farhat, Jody S
Subject: NWD02; Blechinger, Erik T NWO
Elmo Collins Contact

Sir,

I spoke with Elmo a short while ago and think we are on track for the visit Monday. He said that NRC Chairman Jaczko (pronounced yachts-co) wanted:

- to meet me at Fort Calhoun
- would like an overview of what is going on in the basin
- wants to see a little of what we are up against in person

I offered:

- a Monday morning briefing ~0800 in my conference room which I envision to be form Jody and myself
- a flight up the river to Fort Calhoun offering him a view of river conditions with a visit to Calhoun being the main goal (Ruch, Jaczco, Collins, Remus, and potentially President of OPPD)

That would allow me to be back for a NE codel update at 1400 also in my HQ and a follow-on flight to see Harkins at 1600. All of this doable and if we get pinched anywhere for time I'll have the proper folks in place for me.

Elmo really liked the plan and is approaching the Chairman with it. MTF.

V/R,

COL Bob Ruch
Commander
Omaha District, USACE
(402) 995-2001
<https://www.nwo.usace.army.mil/>
<http://www.facebook.com/#!/OmahaUSACE>

[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 10:53 AM
Subject: 23 June 2011 Boat Report 11174
Attachments: BoatReportDaily11174.pdf, Daily Gage 0623.pdf

Attached is the Boat Report for June 23, 2011 #11174.

Thank you,

[REDACTED]
US Army Corps of Engineers
MO River Area Office
Napoleon, MO 64074
[REDACTED]

Check us out on Facebook!
www.facebook.com/MORiverNavigation

MISSOURI RIVER BARGE TRAFFIC

REPORT#: 11174							DATE: 23 JUNE 2011
BOAT NAME	RIVER MILE	UP DN	DEST	LOADS	EMPTY	DRAFT	REMARKS
JEFFERSON CITY RIVER TERMINAL							
ALLISON MARIE	191						Working with dredge Ray Marie
LESLIE ANN	191	DN	143	1			dredge Sandy K
JAMIE LEIGH							Off MOR
TARKIO	143						Stand by
HALLE KATE	143						Stand by
MARGE I	143						Working, tending to dredge Kathy Lee
MAGNOLIA MARINE							
JENNIE DEHMER							Off MOR
LINDA TAYLOR							Off MOR
LESLIE B							Off MOR
MR LAMPTON							Off MOR
RIVER MARINE ENTERPRISES LLC							
MARY LYNN							Off MOR
HERMANN SAND & GRAVEL							
KATHRYN ANN	97						Stand by
MEL SUE	97						Working
W. A. ELLIS CONSTRUCTION							
DAISY BELL	226	UP DN	219				Placing rock in area of rm 226
JOHANNE	219	UP DN	226				Loading rock at rm 219
WESTERN CONTRACTING							
EXPEDITION	661						Stand by
CAPT. JOE	661						Stand by
CORPS OF ENGINEERS							
BRANDY FITZHUGH	627						Stand by
MISSOURI	627						Stand by
JUMBO	104.5						Stand by
STEPHENSON	104.5						Stand by
STEPHENSON II	104.5						Stand by
CLEM MEYER II							Off MOR
COAST GUARD							
CHEYENNE							Off MOR
GASCONADE							Homeport

RIVER MILES AND STAGES FOR HIGH WATER LEVEE CONCERNS

River Mile	Station	Stage in Feet
278.2 - 278.3	Waverly	21
298.3 - 298.6	Waverly	21
298.3 - 300.2	Waverly	21
302.2 - 302.5	Waverly	21
367.0 - 367.5	Kansas City	17
418.2 - 428.0	Atchison	20
428.0 - 437.3	St. Joseph	22
441.7 - 456.5	St Joseph	17

River Mile	Station	Stage in Feet
465.5 - 470.5	St Joseph	19
473.5 - 476.0	St Joseph	19
476.0 - 482.5	St Joseph	19
492.5 - 493.6	Rulo	20
493.6 - 494.0	Rulo	20
498.9 - 499.0	Rulo	20
501.9 - 502.0	Rulo	20
506.5 - 507.1	Rulo	20

Kansas City District, Corps of Engineers Water Management Section RADIO ROOM DAILY GAGES

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME GMT	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)

Missouri River							
Sioux City	732.3	1057.0	30	23JUN2011 13:00	34.18	0.08	0.00
Omaha	615.9	948.2	29	23JUN2011 13:00	34.70	-0.01	0.02
Nebraska City	562.6	905.4	18	23JUN2011 13:30	27.78	0.07	-0.03
Rulo	498.0	837.2	17	23JUN2011 13:30	26.92	0.08	0.29
St. Joseph	448.2	788.2	17	23JUN2011 13:30	26.20	0.15	0.67
Kansas City	366.1	706.4	32	23JUN2011 13:30	27.21	0.27	0.77
Napoleon	328.7	680.2	17	23JUN2011 13:30	22.43	0.13	0.51
Waverly	293.4	646.0	20	23JUN2011 13:30	25.15	0.06	0.54
Glasgow	226.3	586.1	25	23JUN2011 13:30	26.27	0.05	0.25
Boonville	197.1	565.4	21	23JUN2011 13:30	21.85	-0.36	0.25
Jefferson City	143.9	520.1	23	23JUN2011 13:00	21.47	0.02	-0.09
Hermann	97.9	481.6	21	23JUN2011 13:30	21.15	0.00	-0.53
St. Charles	28.2	413.6	25	23JUN2011 13:00	24.45	-0.17	-0.45
St. Louis-Missi R.	0.0	379.9	30	23JUN2011 13:00	32.49	0.02	-0.44

STATION	RIVER MILE	DATUM (ft msl)	FLOOD STAGE (ft)	DATE TIME	STAGE (ft)	6HR CHG (ft)	24HR CHG (ft)

Gasconade River							
Jerome			15	23JUN2011 12:45	2.93	-0.06	-0.24
Rich Fountain			20	23JUN2011 13:30	4.09	-0.07	-0.36
Osage River							
St. Thomas			23	23JUN2011 12:45	8.47	0.29	-0.08
Grand River							
Chillicothe	60.1	658.7	24	23JUN2011 12:45	8.78	-0.65	-3.13
Sumner	36.0	631.2	26	23JUN2011 12:45	15.23	-0.84	-0.29

[REDACTED]

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:30 AM
To: Farhat, Jody S NWD02
Subject: Yellowstone Forecast

ZCZC MKCRVFYEL DEF
TTAA00 KKRF DDHHMM
RVFYEL

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1523Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS YELLOWSTONE WITH EXTRAS

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ***** REVISED *****

: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

: Please note ... Crest forecasts provided are based on 14 days of
: forecast temperatures and should not be assumed to be the absolute
: crests for the snowmelt season.

RIVER/STATION	FS	TDY	F O R E C A S T
TONGUE RIVER			
DECKER MT 1SE		7.5	CREST NEAR 7.7 FT 06/23 PM 2nd CREST NEAR 8.1 FT 06/25 PM
BIRNEY MT	6.0	6.1	CREST NEAR 7.0 FT 06/25 PM 2nd CREST NEAR 5.7 FT 07/01 AM
ASHLAND MT	9.5	9.9E	CREST NEAR 10.3 FT 06/26 PM 2nd CREST NEAR 9.4 FT 07/02 PM

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:
:
:

: DAYTON MT - TONGUE RIVER HSA - BYZ
: FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.5

: LATEST STAGE 4.8 FT AT 1500Z ON 0623

.ER DAYW4 20110623 Z DC201106231523/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	4.8/	4.7/	5.1
.E2 :0624:/	5.0/	4.8/	4.7/	5.0
.E3 :0625:/	5.0/	5.0/	4.9/	4.8
.E4 :0626:/	4.8/	4.8/	4.8/	4.7
.E5 :0627:/	4.7/	4.8/	4.7/	4.7
.E6 :0628:/	4.7			

:

:DECKER MT 1SE - TONGUE RIVER HSA - BYZ

:
:

:LATEST STAGE 7.5 FT AT 1445Z ON 0623

.AR : CREST : DSLM8 20110624 Z DC201106231523/DH00/HGIFFX 7.7 .AR : CREST : DSLM8 20110625 Z
DC201106231523/DH00/HGIFFX 8.1 .AR : CREST : DSLM8 20110629 Z DC201106231523/DH18/HGIFFX 6.8
.AR : CREST : DSLM8 20110630 Z DC201106231523/DH18/HGIFFX 6.9 .AR : CREST : DSLM8 20110702 Z
DC201106231523/DH12/HGIFFX 6.8 .AR : CREST : DSLM8 20110703 Z DC201106231523/DH18/HGIFFX 6.8
.AR : CREST : DSLM8 20110704 Z DC201106231523/DH18/HGIFFX 6.9 .AR : CREST : DSLM8 20110705 Z
DC201106231523/DH12/HGIFFX 6.9 .AR : CREST : DSLM8 20110706 Z DC201106231523/DH12/HGIFFX 6.8

.ER DSLM8 20110623 Z DC201106231523/DH18/HGIFFX/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 7.6/ 7.7/ 7.7

.E2 :0624:/ 7.6/ 7.8/ 8.1/ 7.9

.E3 :0625:/ 7.7/ 7.6/ 7.5/ 7.5

.E4 :0626:/ 7.5/ 7.4/ 7.3/ 7.2

.E5 :0627:/ 7.2/ 7.1/ 7.0/ 7.0

.E6 :0628:/ 6.9

:

:BIRNEY MT - TONGUE RIVER HSA - BYZ

:FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.0

:

:LATEST STAGE 6.1 FT AT 1430Z ON 0623

.AR : CREST : BNYM8 20110625 Z DC201106231523/DH18/HGIFFX 7.0 .AR : CREST : BNYM8 20110701 Z
DC201106231523/DH12/HGIFFX 5.7 .AR : CREST : BNYM8 20110705 Z DC201106231523/DH18/HGIFFX 5.7
.AR : CREST : BNYM8 20110706 Z DC201106231523/DH06/HGIFFX 5.7 .AR : CREST : BNYM8 20110709 Z
DC201106231523/DH06/HGIFFX 5.6

: FALL BELOW FLOOD STAGE ON 06/28/2011 AROUND 6Z

.ER BNYM8 20110623 Z DC201106231523/DH18/HGIFFX/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 6.1/ 6.1/ 6.2

.E2 :0624:/ 6.3/ 6.5/ 6.7/ 6.8

.E3 :0625:/ 6.9/ 7.0/ 7.0/ 6.8

.E4 :0626:/ 6.6/ 6.4/ 6.4/ 6.4

.E5 :0627:/ 6.3/ 6.2/ 6.1/ 6.0

.E6 :0628:/ 5.9

:

:ASHLAND MT - TONGUE RIVER HSA - BYZ

:FLOOD STAGE 9.5 FCST ISSUANCE STAGE 8.5

:

:LATEST ESTIMATED STAGE 9.9 FT AT 1200Z ON 0623 .AR : CREST : ASLM8 20110627 Z

DC201106231523/DH00/HGIFFX 10.3 .AR : CREST : ASLM8 20110702 Z DC201106231523/DH18/HGIFFX 9.4
.AR : CREST : ASLM8 20110707 Z DC201106231523/DH00/HGIFFX 9.3

: FALL BELOW FLOOD STAGE ON 06/30/2011 AROUND 3Z .AR ASLM8 20110623 DH1200/HGIPX 9.90E

.ER ASLM8 20110623 Z DC201106231523/DH18/HGIFFX/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 9.9/ 9.8/ 9.8

.E2 :0624:/ 9.8/ 9.7/ 9.7/ 9.8

.E3 :0625:/ 9.9/ 10.0/ 10.1/ 10.2

.E4 :0626:/ 10.2/ 10.3/ 10.3/ 10.3

.E5 :0627:/ 10.2/ 10.1/ 10.0/ 9.9

.E6 :0628:/ 9.9

:

:MILES CITY MT - PUMPKIN CREEK HSA - BYZ

:FLOOD STAGE 11.0 FCST ISSUANCE STAGE 10.0

:

:LATEST STAGE 4.7 FT AT 1445Z ON 0623

.ER PMKM8 20110623 Z DC201106231523/DH18/HGIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	4.7/	4.7/	4.7
.E2 :0624:/	4.7/	4.7/	4.7/	4.7
.E3 :0625:/	4.7/	4.7/	4.7/	4.7
.E4 :0626:/	4.7/	4.7/	4.7/	4.7
.E5 :0627:/	4.7/	4.7/	4.7/	4.7
.E6 :0628:/	4.7			

:
:MILES CITY MT - TONGUE RIVER HSA - BYZ
:FLOOD STAGE 11.0 FCST ISSUANCE STAGE 9.0
:

:LATEST STAGE 8.1 FT AT 1500Z ON 0623

.ER MICM8 20110623 Z DC201106231523/DH18/HGIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	8.0/	7.9/	7.8
.E2 :0624:/	7.7/	7.7/	7.6/	7.6
.E3 :0625:/	7.6/	7.5/	7.5/	7.4
.E4 :0626:/	7.4/	7.4/	7.4/	7.5
.E5 :0627:/	7.5/	7.6/	7.7/	7.8
.E6 :0628:/	7.9			

:*****

:COMMENT

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:
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:

\$\$

:tea

:...END of MESSAGE...

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:25 AM
To: Farhat, Jody S NWD02
Subject: Milk River Forecast

ZCZC MKCRVFMIL DEF
TTAA00 KKRF DDHMM
RVFMIL

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1522Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS MILK_RES

: ==> This forecast includes obsd precip & 24 hours of QPF <==

:SHERBURNE RES MT - SWIFT CURRENT CREEK RESERVOIR INFLOW FORECAST

:
:
:LATEST ESTIMATED DISCHARGE 1.04 KCFS AT 1200Z ON 0623
.ER SBUM8 20110623 Z DC201106231522/DH18/QIIFF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 1.08/ 1.10/ 1.10
.E2 :0624:/ 1.08/ 1.04/ 0.98/ 0.93
.E3 :0625:/ 0.88/ 0.83/ 0.79/ 0.74
.E4 :0626:/ 0.71/ 0.68/ 0.65/ 0.63
.E5 :0627:/ 0.61/ 0.60/ 0.60/ 0.59
.E6 :0628:/ 0.59

:EASTERN CROSSING MT - MILK RIVER

:FLOOD STAGE 8.0 FCST ISSUANCE STAGE 7.5

:
:LATEST ESTIMATED DISCHARGE 1.25 KCFS AT 1200Z ON 0623
.ER ERNM8 20110623 Z DC201106231522/DH18/QRIFF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 1.23/ 1.21/ 1.19
.E2 :0624:/ 1.17/ 1.15/ 1.13/ 1.10
.E3 :0625:/ 1.08/ 1.07/ 1.06/ 1.05
.E4 :0626:/ 1.04/ 1.03/ 1.03/ 1.02
.E5 :0627:/ 1.01/ 1.00/ 0.99/ 0.97
.E6 :0628:/ 0.96

:FRESNO RES MT - MILK RIVER RESERVOIR INFLOW FORECAST

:
:
:LATEST ESTIMATED DISCHARGE 1.13 KCFS AT 1200Z ON 0623
.ER HAVM8 20110623 Z DC201106231522/DH18/QIIFF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 1.15/ 1.17/ 1.20
.E2 :0624:/ 1.23/ 1.24/ 1.24/ 1.21

.E3 :0625:/	1.17/	1.12/	1.08/	1.04
.E4 :0626:/	1.02/	0.99/	0.98/	0.97
.E5 :0627:/	0.96/	0.95/	0.94/	0.94
.E6 :0628:/	0.92			

:
:FRENCHMAN RES MT - FRENCHMAN RIVER RESERVOIR INFLOW FORECAST
:

:LATEST ESTIMATED DISCHARGE 1.26 KCFS AT 1200Z ON 0623

.ER FRDM8 20110623 Z DC201106231522/DH18/QIIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 1.12/ 0.99/ 0.89

.E2 :0624:/ 0.79/ 0.71/ 0.63/ 0.57

.E3 :0625:/ 0.52/ 0.46/ 0.42/ 0.38

.E4 :0626:/ 0.36/ 0.34/ 0.33/ 0.32

.E5 :0627:/ 0.31/ 0.30/ 0.29/ 0.28

.E6 :0628:/ 0.28

:*****

:COMMENT

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:ajm

:...END of MESSAGE...

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:25 AM
To: Farhat, Jody S NWD02
Subject: Milk River Forecast

ZCZC MKCRVFMIL DEF
TTAA00 KKRF DDHMM
RVFMIL

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1518Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS MILK

: ==> This forecast includes obsd precip & 24 hours of QPF <==

RIVER/STATION	FS	TDY	F O R E C A S T
MILK RIVER			
TAMPICO MT	25.0	25.6	FALL BELOW FS 06/25 AROUND 15Z
GLASGOW MT	25.0	30.2	FALL SLOWLY
NASHUA MT	20.0	23.1	FALL BELOW FS 06/25 AROUND 22Z
MISSOURI RIVER			
WOLF POINT MT		13.2	FALL SLOWLY NEXT FEW DAYS
CULBERTSON MT		16.6	FALL SLOWLY NEXT FEW DAYS
WILLISTON ND 5SW	22.0	30.3	FALL SLOWLY NEXT FEW DAYS

:INTL BNDRY - ST. MARY RIVER HSA - TFX
:FLOOD STAGE 7.5 FCST ISSUANCE STAGE 6.5

:LATEST STAGE 7.2 FT AT 1500Z ON 0623

.ER SMBM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	7.1/	7.1/	7.1
.E2 :0624:/	7.1/	7.0/	7.0/	7.0
.E3 :0625:/	6.9/	6.8/	6.7/	6.7
.E4 :0626:/	6.6/	6.5/	6.4/	6.4
.E5 :0627:/	6.3/	6.3/	6.2/	6.2
.E6 :0628:/	6.1			

.ER SMBM8 20110623 Z DC201106231518/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	4.13/	4.08/	4.04
.E2 :0624:/	4.00/	3.95/	3.88/	3.79
.E3 :0625:/	3.69/	3.58/	3.46/	3.34
.E4 :0626:/	3.22/	3.10/	2.98/	2.87
.E5 :0627:/	2.76/	2.67/	2.59/	2.53
.E6 :0628:/	2.47			

:HAVRE MT - MILK RIVER HSA - TFX

:FLOOD STAGE 10.0 FCST ISSUANCE STAGE 8.5

:

:LATEST STAGE 5.5 FT AT 1415Z ON 0623

.ER HVRM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 5.4/ 5.4/ 5.4

.E2 :0624:/ 5.4/ 5.4/ 5.4/ 5.3

.E3 :0625:/ 5.3/ 5.2/ 5.1/ 5.0

.E4 :0626:/ 4.8/ 4.8/ 4.7/ 4.7

.E5 :0627:/ 4.7/ 4.7/ 4.7/ 4.6

.E6 :0628:/ 4.5

:

:CHINOOK MT - CLEAR CREEK HSA - TFX

:FLOOD STAGE 6.5 FCST ISSUANCE STAGE 5.5

:

:LATEST STAGE 4.5 FT AT 1415Z ON 0623

.ER CCMM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 4.4/ 4.4/ 4.3

.E2 :0624:/ 4.2/ 4.2/ 4.1/ 4.1

.E3 :0625:/ 4.0/ 4.0/ 3.9/ 3.9

.E4 :0626:/ 3.8/ 3.8/ 3.8/ 3.7

.E5 :0627:/ 3.7/ 3.6/ 3.6/ 3.6

.E6 :0628:/ 3.6

:

:HARLEM MT - MILK RIVER HSA - TFX

:FLOOD STAGE 21.0 FCST ISSUANCE STAGE 19.0

:

:LATEST STAGE 14.6 FT AT 1430Z ON 0623

.ER HRLM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 14.5/ 14.2/ 13.9

.E2 :0624:/ 13.6/ 13.4/ 13.2/ 12.9

.E3 :0625:/ 12.7/ 12.6/ 12.4/ 12.3

.E4 :0626:/ 12.2/ 12.0/ 11.9/ 11.8

.E5 :0627:/ 11.6/ 11.4/ 11.1/ 10.8

.E6 :0628:/ 10.5

.ER HRLM8 20110623 Z DC201106231518/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 2.79/ 2.70/ 2.63

.E2 :0624:/ 2.55/ 2.49/ 2.43/ 2.37

.E3 :0625:/ 2.32/ 2.27/ 2.23/ 2.20

.E4 :0626:/ 2.17/ 2.14/ 2.11/ 2.07

.E5 :0627:/ 2.04/ 1.99/ 1.93/ 1.86

.E6 :0628:/ 1.80

:

:DODSON MT - MILK RIVER HSA - GGW

:

:

:LATEST STAGE 18.8 FT AT 1415Z ON 0623

.ER DMRM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 18.8/ 18.7/ 18.6

.E2 :0624:/ 18.5/ 18.4/ 18.2/ 18.1

.E3 :0625:/ 18.0/ 17.8/ 17.6/ 17.5

.E4 :0626:/ 17.4/ 17.3/ 17.2/ 17.1

.E5 :0627:/ 16.9/ 16.7/ 16.6/ 16.3

```

.E6 :0628:/      16.2
:
:DODSON MT - MILK RIVER      HSA - GGW
: FLOWS
:
:LATEST ESTIMATED DISCHARGE 3.76 KCFS AT 1200Z ON 0623
.ER DMRM8      20110623 Z DC201106231518/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      3.71/      3.63/      3.61
.E2 :0624:/      3.56/      3.50/      3.43/      3.36
.E3 :0625:/      3.30/      3.25/      3.15/      3.10
.E4 :0626:/      3.05/      3.01/      2.98/      2.95
.E5 :0627:/      2.87/      2.78/      2.71/      2.62
.E6 :0628:/      2.56
:
:MALTA MT - MILK RIVER      HSA - GGW
:FLOOD STAGE 19.5      FCST ISSUANCE STAGE 17.5
:
:LATEST ESTIMATED STAGE 12.8 FT AT 1200Z ON 0623 .AR MALM8 20110623 DH1200/HGIPX 12.80E
.ER MALM8      20110623 Z DC201106231518/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      12.7/      12.3/      11.9
.E2 :0624:/      11.5/      11.1/      10.9/      10.7
.E3 :0625:/      10.5/      10.3/      10.2/      10.0
.E4 :0626:/      9.8/      9.7/      9.5/      9.4
.E5 :0627:/      9.3/      9.2/      9.1/      9.0
.E6 :0628:/      8.9
:
:SACO MT JUNEBOG BRIDGE - MILK RIVER      HSA - GGW
:FLOOD STAGE 20.0      FCST ISSUANCE STAGE 18.0
:
:LATEST STAGE 17.7 FT AT 1500Z ON 0623
.ER SACM8      20110623 Z DC201106231518/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      17.7/      17.7/      17.6
.E2 :0624:/      17.5/      17.5/      17.3/      17.0
.E3 :0625:/      16.8/      16.6/      16.3/      16.1
.E4 :0626:/      15.8/      15.5/      15.3/      15.0
.E5 :0627:/      14.7/      14.4/      14.2/      13.9
.E6 :0628:/      13.7
.ER SACM8      20110623 Z DC201106231518/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      7.05/      7.01/      6.96
.E2 :0624:/      6.91/      6.88/      6.73/      6.58
.E3 :0625:/      6.44/      6.31/      6.18/      6.03
.E4 :0626:/      5.87/      5.72/      5.56/      5.40
.E5 :0627:/      5.25/      5.10/      4.96/      4.82
.E6 :0628:/      4.69
:
:TAMPICO MT - MILK RIVER      HSA - GGW
:FLOOD STAGE 25.0      FCST ISSUANCE STAGE 23.0
:
:LATEST STAGE 25.6 FT AT 1430Z ON 0623
: FALL BELOW FLOOD STAGE ON 06/25/2011 AROUND 15Z
.ER TMPM8      20110623 Z DC201106231518/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      25.6/      25.5/      25.4

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.E2 :0624:/      25.3/      25.3/      25.2/      25.1
.E3 :0625:/      25.0/      25.0/      24.8/      24.8
.E4 :0626:/      24.7/      24.6/      24.5/      24.4
.E5 :0627:/      24.3/      24.2/      24.1/      23.9
.E6 :0628:/      23.8
.ER TMPM8      20110623 Z DC201106231518/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      9.30/      9.15/      8.97
.E2 :0624:/      8.79/      8.61/      8.45/      8.29
.E3 :0625:/      8.14/      7.98/      7.84/      7.70
.E4 :0626:/      7.57/      7.46/      7.34/      7.23
.E5 :0627:/      7.12/      7.02/      6.91/      6.79
.E6 :0628:/      6.66
:
:GLASGOW MT - MILK RIVER      HSA - GGW
:FLOOD STAGE 25.0      FCST ISSUANCE STAGE 23.0
:
:LATEST STAGE 30.2 FT AT 1310Z ON 0623
.ER GLWM8      20110623 Z DC201106231518/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      30.0/      29.7/      29.4
.E2 :0624:/      29.2/      29.0/      28.8/      28.6
.E3 :0625:/      28.4/      28.2/      27.9/      27.7
.E4 :0626:/      27.5/      27.3/      27.1/      26.9
.E5 :0627:/      26.7/      26.5/      26.3/      26.2
.E6 :0628:/      26.0
:
:NASHUA MT - MILK RIVER      HSA - GGW
:FLOOD STAGE 20.0      FCST ISSUANCE STAGE 18.0
:
:LATEST STAGE 23.1 FT AT 1500Z ON 0623
: FALL BELOW FLOOD STAGE ON 06/25/2011 AROUND 22Z
.ER NSHM8      20110623 Z DC201106231518/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      23.0/      22.7/      22.5
.E2 :0624:/      22.1/      21.7/      21.3/      20.9
.E3 :0625:/      20.5/      20.2/      19.9/      19.6
.E4 :0626:/      19.3/      19.0/      18.6/      18.3
.E5 :0627:/      18.0/      17.7/      17.3/      17.1
.E6 :0628:/      16.9
.ER NSHM8      20110623 Z DC201106231518/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      12.56/      12.34/      12.12
.E2 :0624:/      11.77/      11.38/      11.04/      10.72
.E3 :0625:/      10.43/      10.14/      9.91/      9.68
.E4 :0626:/      9.45/      9.22/      8.99/      8.76
.E5 :0627:/      8.54/      8.33/      8.13/      7.96
.E6 :0628:/      7.83
:
:POPLAR MT - POPLAR RIVER      HSA - GGW
:FLOOD STAGE 15.5      FCST ISSUANCE STAGE 13.5
:
:LATEST STAGE 8.3 FT AT 1345Z ON 0623
.ER PLRM8      20110623 Z DC201106231518/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      8.3/      8.3/      8.6
.E2 :0624:/      8.7/      8.7/      8.5/      8.1

```

.E3 :0625:/	7.5/	7.3/	7.2/	7.2
.E4 :0626:/	7.3/	7.4/	7.4/	7.5
.E5 :0627:/	7.5/	7.4/	7.3/	7.2
.E6 :0628:/	7.1			

.ER PLRM8 20110623 Z DC201106231518/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	2.11/	2.18/	2.35
.E2 :0624:/	2.46/	2.43/	2.28/	1.99
.E3 :0625:/	1.63/	1.46/	1.41/	1.45
.E4 :0626:/	1.50/	1.54/	1.57/	1.59
.E5 :0627:/	1.59/	1.56/	1.51/	1.45
.E6 :0628:/	1.38			

:WOLF POINT MT - MISSOURI RIVER HSA - GGW

:LATEST STAGE 13.2 FT AT 1448Z ON 0623

.ER WPTM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	13.2/	13.2/	13.2
.E2 :0624:/	13.2/	13.2/	13.2/	13.2
.E3 :0625:/	13.2/	13.2/	13.1/	13.1
.E4 :0626:/	13.1/	13.1/	13.1/	13.1
.E5 :0627:/	13.1/	13.1/	13.1/	13.0
.E6 :0628:/	13.0			

:CULBERTSON MT - MISSOURI RIVER HSA - GGW

:LATEST STAGE 16.6 FT AT 1500Z ON 0623

.ER CLBM8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	16.3/	16.1/	16.0
.E2 :0624:/	15.9/	15.8/	15.7/	15.5
.E3 :0625:/	15.4/	15.4/	15.4/	15.3
.E4 :0626:/	15.3/	15.3/	15.2/	15.2
.E5 :0627:/	15.2/	15.1/	15.1/	15.1
.E6 :0628:/	15.1			

:WILLISTON ND 5SW - MISSOURI RIVER HSA - BIS

:FLOOD STAGE 22.0 FCST ISSUANCE STAGE 20.0

:LATEST STAGE 30.3 FT AT 1230Z ON 0623

.ER WLTN8 20110623 Z DC201106231518/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	30.3/	30.2/	30.1
.E2 :0624:/	30.1/	30.0/	29.9/	29.8
.E3 :0625:/	29.8/	29.7/	29.7/	29.6
.E4 :0626:/	29.6/	29.6/	29.5/	29.6
.E5 :0627:/	29.6/	29.6/	29.6/	29.7
.E6 :0628:/	29.7			

:*****

:COMMENT

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:ajm
:...END of MESSAGE...

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:20 AM
To: Farhat, Jody S NWD02
Subject: Upper Missouri Forecast

ZCZC MKCRVFUMO DEF
TTAA00 KKRF DDHMM
RVFUMO

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1518Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPRMO_RES

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ==> This forecast includes projected snowmelt due to <==

: ==> forecasted daily max/min temperatures for the next 14 days <==

: FT PECK RES MT - MISSOURI RIVER RESERVOIR INFLOW FORECAST

:
:

: LATEST ESTIMATED DISCHARGE 45.19 KCFS AT 1200Z ON 0623

.ER FPKM8 20110623 Z DC201106231518/DH18/QIIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	44.78/	44.39/	44.05
.E2 :0624:/	43.75/	43.49/	43.23/	42.97
.E3 :0625:/	42.70/	42.40/	42.09/	41.78
.E4 :0626:/	41.48/	41.22/	41.01/	40.84
.E5 :0627:/	40.69/	40.54/	40.38/	40.22
.E6 :0628:/	40.05/	39.88/	39.74/	39.60
.E7 :0629:/	39.48/	39.36/	39.22/	39.06
.E8 :0630:/	38.88/	38.66/	38.43/	38.18
.E9 :0701:/	37.94/	37.74/	37.56/	37.42
.E10 :0702:/	37.30/	37.19/	37.07/	36.94
.E11 :0703:/	36.77/	36.56/	36.28/	35.94
.E12 :0704:/	35.54/	35.09/	34.60/	34.09
.E13 :0705:/	33.56/	33.04/	32.57/	32.21
.E14 :0706:/	32.06/	32.20/	32.67/	33.46
.E15 :0707:/	34.47			

: *****
: COMMENT

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:ajm

:...END of MESSAGE...

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:20 AM
To: Farhat, Jody S NWD02
Subject: Upper Missouri Forecast

ZCZC MKCRVFUMO DEF
TTAA00 KKRF DDHHMM
RVFUMO

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1517Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPRMO_RES

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

:CLARK CANYON RES MT - BEAVERHEAD RIVER RESERVOIR INFLOW FORECAST

:
: LATEST ESTIMATED DISCHARGE 1.15 KCFS AT 1200Z ON 0623
: ER CLKM8 20110623 Z DC201106231517/DH18/QIIF/DIH6
: QPF FCST 12Z 18Z 0Z 6Z
: E1 :0623: / 1.14/ 1.13/ 1.13
: E2 :0624:/ 1.14/ 1.16/ 1.17/ 1.18
: E3 :0625:/ 1.18/ 1.17/ 1.16/ 1.15
: E4 :0626:/ 1.14/ 1.13/ 1.11/ 1.10
: E5 :0627:/ 1.09/ 1.08/ 1.07/ 1.06
: E6 :0628:/ 1.05/ 1.04/ 1.03/ 1.02
: E7 :0629:/ 1.01/ 1.00/ 0.99/ 0.98
: E8 :0630:/ 0.97

: HEBGEN RES MT - MADISON RIVER RESERVOIR INFLOW FORECAST

:
: LATEST ESTIMATED DISCHARGE 3.45 KCFS AT 1200Z ON 0623
: ER HBDM8 20110623 Z DC201106231517/DH18/QIIF/DIH6
: QPF FCST 12Z 18Z 0Z 6Z
: E1 :0623: / 3.46/ 3.43/ 3.45
: E2 :0624:/ 3.48/ 3.48/ 3.46/ 3.43
: E3 :0625:/ 3.41/ 3.37/ 3.29/ 3.20
: E4 :0626:/ 3.13/ 3.06/ 3.00/ 2.94
: E5 :0627:/ 2.89/ 2.83/ 2.78/ 2.73
: E6 :0628:/ 2.68/ 2.64/ 2.60/ 2.56
: E7 :0629:/ 2.52/ 2.48/ 2.45/ 2.42
: E8 :0630:/ 2.38

: CANYON FERRY RES MT - MISSOURI RIVER RESERVOIR INFLOW FORECAST


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:
:
:LATEST ESTIMATED DISCHARGE 25.21 KCFS AT 1200Z ON 0623
.ER CYNM8      20110623 Z DC201106231517/DH18/QIIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      24.93/    24.59/    24.50
.E2 :0624:/    24.71/    25.23/    25.95/    26.70
.E3 :0625:/    27.35/    27.85/    28.19/    28.39
.E4 :0626:/    28.46/    28.38/    28.16/    27.79
.E5 :0627:/    27.31/    26.75/    26.15/    25.51
.E6 :0628:/    24.87/    24.24/    23.65/    23.12
.E7 :0629:/    22.66/    22.27/    21.94/    21.68
.E8 :0630:/    21.51

```

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:
:GIBSON RES MT - SUN RIVER      RESERVOIR INFLOW FORECAST
:
:

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```

:LATEST ESTIMATED DISCHARGE 5.09 KCFS AT 1200Z ON 0623
.ER AGSM8      20110623 Z DC201106231517/DH18/QIIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      5.07/    5.08/    5.23
.E2 :0624:/    5.61/    5.99/    6.14/    6.06
.E3 :0625:/    5.85/    5.60/    5.35/    5.11
.E4 :0626:/    4.89/    4.70/    4.51/    4.35
.E5 :0627:/    4.21/    4.10/    3.99/    3.90
.E6 :0628:/    3.83/    3.79/    3.75/    3.71
.E7 :0629:/    3.70/    3.70/    3.70/    3.74
.E8 :0630:/    3.87

```

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:
:TIBER RES MT - MARIAS RIVER      RESERVOIR INFLOW FORECAST
:
:

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```

:LATEST ESTIMATED DISCHARGE 5.00 KCFS AT 1200Z ON 0623
.ER TBRM8      20110623 Z DC201106231517/DH18/QIIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      5.06/    4.94/    4.84
.E2 :0624:/    4.73/    4.62/    4.57/    4.56
.E3 :0625:/    4.59/    4.62/    4.63/    4.61
.E4 :0626:/    4.57/    4.51/    4.43/    4.35
.E5 :0627:/    4.27/    4.19/    4.11/    4.04
.E6 :0628:/    3.98/    3.92/    3.87/    3.84
.E7 :0629:/    3.81/    3.79/    3.78/    3.78
.E8 :0630:/    3.79

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:COMMENT
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:

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:ajm

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:....END of MESSAGE...

```

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:20 AM
To: Farhat, Jody S NWD02
Subject: Upper Missouri Forecast

ZCZC MKCRVFUMO DEF
TTAA00 KKRF DDHHMM
RVFUMO

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1504Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPRMO extras

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

: Please note ... Crest forecasts provided are based on 14 days of
: forecast temperatures and should not be assumed to be the absolute
: crests for the snowmelt season.

RIVER/STATION	FS	TDY	F O R E C A S T
BIG HOLE RIVER			
MELROSE MT	6.0	5.8	CREST NEAR 6.2 FT 06/25 AM
JEFFERSON RIVER			
THREE FORKS MT 2.5NW	8.0	7.9	CREST NEAR 8.6 FT 06/25 PM
GALLATIN RIVER			
GALLATIN GTWY MT 8SW	6.0	5.4	CREST NEAR 6.5 FT 06/24 PM
LOGAN MT	8.0	8.4	CREST NEAR 9.5 FT 06/25 PM
MISSOURI RIVER			
TOSTON MT	10.5	10.1	CREST NEAR 11.1 FT 06/25 PM
MISSOURI RIVER			
ULM MT 6E	13.5	13.2	CREST NEAR 13.4 FT 06/27 AM
LANDUSKY MT	25.0	25.4	FALL BELOW FS 06/25 AROUND 13Z
MUSSELSHELL RIVER			
HARLOWTON MT	7.0	5.9	FALL SLOWLY
SHAWMUT MT		6.7	FALL SLOWLY
LAVINA MT		8.1E	FALL SLOWLY
ROUNDUP MT	10.0	8.5	FALL SLOWLY
MUSSELSHELL MT		10.7	FALL SLOWLY
MOSBY MT	8.0	10.6	FALL SLOWLY

:MELROSE MT - BIG HOLE RIVER HSA - TFX
:FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.0

:
:LATEST STAGE 5.8 FT AT 1415Z ON 0623

.AR : CREST : MLRM8 20110625 Z DC201106231504/DH12/HGIFFX 6.2

: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 13Z
 : FALL BELOW FLOOD STAGE ON 06/26/2011 AROUND 5Z
 .ER MLRM8 20110623 Z DC201106231504/DH18/HGIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 5.8/ 5.8/ 5.9
 .E2 :0624:/ 6.0/ 6.1/ 6.1/ 6.2
 .E3 :0625:/ 6.2/ 6.1/ 6.1/ 6.0
 .E4 :0626:/ 5.9/ 5.7/ 5.6/ 5.5
 .E5 :0627:/ 5.4/ 5.3/ 5.2/ 5.2
 .E6 :0628:/ 5.1
 .ER MLRM8 20110623 Z DC201106231504/DH18/QRIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 7.04/ 7.20/ 7.37
 .E2 :0624:/ 7.56/ 7.75/ 7.91/ 7.99
 .E3 :0625:/ 8.01/ 7.93/ 7.78/ 7.56
 .E4 :0626:/ 7.29/ 7.01/ 6.72/ 6.46
 .E5 :0627:/ 6.22/ 6.01/ 5.84/ 5.68
 .E6 :0628:/ 5.56

:
 :TWIN BRIDGES - BEAVERHEAD RIVER HSA - TFX
 :FLOOD STAGE 7.0 FCST ISSUANCE STAGE 6.0

:
 :LATEST STAGE 4.4 FT AT 1400Z ON 0623
 .ER TWNM8 20110623 Z DC201106231504/DH18/HGIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 4.4/ 4.6/ 4.8
 .E2 :0624:/ 5.0/ 5.1/ 5.2/ 5.2
 .E3 :0625:/ 5.1/ 5.1/ 5.0/ 4.9
 .E4 :0626:/ 4.8/ 4.7/ 4.7/ 4.6
 .E5 :0627:/ 4.6/ 4.5/ 4.5/ 4.4
 .E6 :0628:/ 4.4
 .ER TWNM8 20110623 Z DC201106231504/DH18/QRIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 0.28/ 0.33/ 0.40
 .E2 :0624:/ 0.45/ 0.50/ 0.52/ 0.51
 .E3 :0625:/ 0.50/ 0.47/ 0.45/ 0.42
 .E4 :0626:/ 0.40/ 0.38/ 0.37/ 0.35
 .E5 :0627:/ 0.34/ 0.32/ 0.31/ 0.30
 .E6 :0628:/ 0.29

:
 :TWIN BRIDGES - JEFFERSON RIVER HSA - TFX
 :FLOOD STAGE 10.0 FCST ISSUANCE STAGE 9.0

:
 :LATEST STAGE 8.2 FT AT 1415Z ON 0623
 .ER TWIM8 20110623 Z DC201106231504/DH18/HGIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 8.3/ 8.3/ 8.4
 .E2 :0624:/ 8.5/ 8.6/ 8.7/ 8.8
 .E3 :0625:/ 8.9/ 8.9/ 8.8/ 8.8
 .E4 :0626:/ 8.6/ 8.5/ 8.3/ 8.1
 .E5 :0627:/ 8.0/ 7.8/ 7.6/ 7.5
 .E6 :0628:/ 7.3

:
 :THREE FORKS MT 2.5NW - JEFFERSON RIVER HSA - TFX
 :FLOOD STAGE 8.0 FCST ISSUANCE STAGE 7.0

:
 :LATEST STAGE 7.9 FT AT 1400Z ON 0623

.AR : CREST : TFKM8 20110625 Z DC201106231504/DH18/HGIFFX 8.6
: RISE ABOVE FLOOD STAGE ON 06/23/2011 AROUND 18Z
: FALL BELOW FLOOD STAGE ON 06/28/2011 AROUND 6Z
.ER TFKM8 20110623 Z DC201106231504/DH18/HGIFFX/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 8.0/ 8.1/ 8.2
.E2 :0624:/ 8.3/ 8.4/ 8.5/ 8.5
.E3 :0625:/ 8.6/ 8.6/ 8.6/ 8.6
.E4 :0626:/ 8.5/ 8.5/ 8.4/ 8.4
.E5 :0627:/ 8.3/ 8.2/ 8.1/ 8.0
.E6 :0628:/ 7.9
.ER TFKM8 20110623 Z DC201106231504/DH18/QRIFFX/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 10.13/ 10.69/ 11.25
.E2 :0624:/ 11.73/ 12.11/ 12.39/ 12.61
.E3 :0625:/ 12.73/ 12.79/ 12.79/ 12.71
.E4 :0626:/ 12.57/ 12.36/ 12.09/ 11.75
.E5 :0627:/ 11.38/ 10.97/ 10.56/ 10.15
.E6 :0628:/ 9.77
:
:GALLATIN GTWY MT 8SW - GALLATIN RIVER HSA - TFX
:FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.0
:
:LATEST STAGE 5.4 FT AT 1400Z ON 0623
.AR : CREST : GLGM8 20110625 Z DC201106231504/DH00/HGIFFX 6.5
: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 9Z
: FALL BELOW FLOOD STAGE ON 06/26/2011 AROUND 14Z
.ER GLGM8 20110623 Z DC201106231504/DH18/HGIFFX/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 5.6/ 5.6/ 5.8
.E2 :0624:/ 6.2/ 6.4/ 6.5/ 6.5
.E3 :0625:/ 6.4/ 6.3/ 6.2/ 6.1
.E4 :0626:/ 6.0/ 6.0/ 5.9/ 5.8
.E5 :0627:/ 5.8/ 5.8/ 5.7/ 5.7
.E6 :0628:/ 5.7
.ER GLGM8 20110623 Z DC201106231504/DH18/QRIFFX/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 6.37/ 6.56/ 7.01
.E2 :0624:/ 7.73/ 8.37/ 8.61/ 8.54
.E3 :0625:/ 8.35/ 8.13/ 7.87/ 7.61
.E4 :0626:/ 7.41/ 7.25/ 7.08/ 6.93
.E5 :0627:/ 6.85/ 6.82/ 6.77/ 6.71
.E6 :0628:/ 6.71
:
:LOGAN MT - GALLATIN RIVER HSA - TFX
:FLOOD STAGE 8.0 FCST ISSUANCE STAGE 7.0
:
:LATEST STAGE 8.4 FT AT 1400Z ON 0623
.AR : CREST : LOGM8 20110625 Z DC201106231504/DH18/HGIFFX 9.5
: FALL BELOW FLOOD STAGE ON 07/03/2011 AROUND 6Z
.ER LOGM8 20110623 Z DC201106231504/DH18/HGIFFX/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 8.4/ 8.6/ 8.8
.E2 :0624:/ 9.1/ 9.2/ 9.3/ 9.4
.E3 :0625:/ 9.5/ 9.5/ 9.5/ 9.5
.E4 :0626:/ 9.3/ 9.2/ 9.1/ 9.0
.E5 :0627:/ 8.9/ 8.8/ 8.8/ 8.7

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.E6 :0628:/      8.6
.ER LOGM8      20110623 Z DC201106231504/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      5.99/      6.40/      6.86
.E2 :0624:/      7.45/      7.75/      7.88/      8.09
.E3 :0625:/      8.24/      8.37/      8.37/      8.26
.E4 :0626:/      7.98/      7.76/      7.53/      7.32
.E5 :0627:/      7.05/      6.89/      6.74/      6.63
.E6 :0628:/      6.47
:
:TOSTON MT - MISSOURI RIVER      HSA - TFX
:FLOOD STAGE 10.5      FCST ISSUANCE STAGE 8.5
:
:LATEST STAGE 10.1 FT AT 1400Z ON 0623
.AR : CREST : TOSM8 20110626 Z DC201106231504/DH00/HGIFFX 11.1
: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 12Z
: FALL BELOW FLOOD STAGE ON 06/27/2011 AROUND 20Z
.ER TOSM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      10.1/      10.2/      10.3
.E2 :0624:/      10.5/      10.7/      10.8/      10.9
.E3 :0625:/      11.0/      11.1/      11.1/      11.1
.E4 :0626:/      11.1/      11.0/      10.9/      10.8
.E5 :0627:/      10.7/      10.5/      10.4/      10.3
.E6 :0628:/      10.2
.ER TOSM8      20110623 Z DC201106231504/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      22.19/      22.55/      23.30
.E2 :0624:/      24.24/      25.19/      25.92/      26.42
.E3 :0625:/      26.81/      27.07/      27.24/      27.23
.E4 :0626:/      27.05/      26.68/      26.23/      25.70
.E5 :0627:/      25.12/      24.49/      23.86/      23.26
.E6 :0628:/      22.69
:
:WOLF CREEK MT - LITTLE PRICKLY PEAR CREEK      HSA - TFX
:
:
:LATEST STAGE 4.6 FT AT 1445Z ON 0623
.ER LPPM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      4.6/      4.6/      4.6
.E2 :0624:/      4.6/      4.5/      4.5/      4.5
.E3 :0625:/      4.5/      4.4/      4.4/      4.3
.E4 :0626:/      4.3/      4.3/      4.2/      4.2
.E5 :0627:/      4.2/      4.2/      4.2/      4.2
.E6 :0628:/      4.1
:
:CRAIG MT 6E - DEARBORN RIVER      HSA - TFX
:FLOOD STAGE 6.5      FCST ISSUANCE STAGE 5.5
:
:LATEST STAGE 5.3 FT AT 1415Z ON 0623
.ER DBRM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      5.1/      5.0/      5.0
.E2 :0624:/      5.0/      5.0/      4.9/      4.9
.E3 :0625:/      4.8/      4.7/      4.6/      4.6
.E4 :0626:/      4.5/      4.5/      4.4/      4.4

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.E5 :0627:/      4.3/      4.3/      4.2/      4.2
.E6 :0628:/      4.2
:
:CASCADE MT - MISSOURI RIVER      HSA - TFX
:FLOOD STAGE 14.0      FCST ISSUANCE STAGE 12.0
:
:LATEST STAGE 11.4 FT AT 1500Z ON 0623
.ER CASM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      11.4/      11.4/      11.4
.E2 :0624:/      11.4/      11.5/      11.5/      11.6
.E3 :0625:/      11.6/      11.6/      11.7/      11.7
.E4 :0626:/      11.7/      11.7/      11.7/      11.7
.E5 :0627:/      11.7/      11.6/      11.6/      11.6
.E6 :0628:/      11.6
:
:ULM MT 8SE - SMITH RIVER      HSA - TFX
:FLOOD STAGE 10.0      FCST ISSUANCE STAGE 9.0
:
:LATEST STAGE 7.4 FT AT 1300Z ON 0623
.ER ULLM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      7.4/      7.3/      7.3
.E2 :0624:/      7.3/      7.3/      7.3/      7.3
.E3 :0625:/      7.3/      7.4/      7.4/      7.4
.E4 :0626:/      7.3/      7.3/      7.2/      7.1
.E5 :0627:/      7.0/      7.0/      6.9/      6.9
.E6 :0628:/      6.8
:
:ULM MT 6E - MISSOURI RIVER      HSA - TFX
:FLOOD STAGE 13.5      FCST ISSUANCE STAGE 11.5
:
:LATEST STAGE 13.2 FT AT 1400Z ON 0623
.AR : CREST : ULLM8 20110627 Z DC201106231504/DH06/HGIFX 13.4
.ER ULLM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      13.2/      13.1/      13.1
.E2 :0624:/      13.0/      13.0/      13.0/      13.0
.E3 :0625:/      13.1/      13.2/      13.2/      13.3
.E4 :0626:/      13.3/      13.4/      13.4/      13.4
.E5 :0627:/      13.4/      13.4/      13.3/      13.3
.E6 :0628:/      13.3
.ER ULLM8      20110623 Z DC201106231504/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      23.39/      23.34/      23.19
.E2 :0624:/      23.03/      22.93/      22.93/      23.03
.E3 :0625:/      23.19/      23.39/      23.57/      23.71
.E4 :0626:/      23.81/      23.90/      23.97/      24.00
.E5 :0627:/      23.99/      23.92/      23.82/      23.72
.E6 :0628:/      23.62
:
:FT BENTON MT - MISSOURI RIVER      HSA - TFX
:FLOOD STAGE 13.5      FCST ISSUANCE STAGE 12.0
:
:LATEST STAGE 7.6 FT AT 1430Z ON 0623
.ER FBNM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z

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.E1 :0623:      /      7.6/      7.6/      7.6
.E2 :0624:/      7.6/      7.6/      7.6/      7.6
.E3 :0625:/      7.6/      7.6/      7.6/      7.6
.E4 :0626:/      7.6/      7.6/      7.6/      7.6
.E5 :0627:/      7.6/      7.6/      7.6/      7.6
.E6 :0628:/      7.5
.ER FBNM8      20110623 Z DC201106231504/DH18/QRIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      29.89/      29.82/      29.84
.E2 :0624:/      29.91/      29.98/      29.96/      29.91
.E3 :0625:/      29.85/      29.81/      29.81/      29.85
.E4 :0626:/      29.90/      29.94/      29.96/      29.96
.E5 :0627:/      29.94/      29.88/      29.79/      29.66
.E6 :0628:/      29.50

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:
:SIMMS MT 1NE - SUN RIVER      HSA - TFX
:FLOOD STAGE 7.5      FCST ISSUANCE STAGE 6.5

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:LATEST STAGE 6.0 FT AT 1430Z ON 0623
.ER SSRM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      6.1/      6.1/      6.1
.E2 :0624:/      6.0/      6.0/      6.0/      5.9
.E3 :0625:/      5.9/      5.9/      5.8/      5.8
.E4 :0626:/      5.7/      5.7/      5.6/      5.6
.E5 :0627:/      5.5/      5.5/      5.5/      5.5
.E6 :0628:/      5.4
.ER SSRM8      20110623 Z DC201106231504/DH18/QRIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      4.25/      4.25/      4.24
.E2 :0624:/      4.20/      4.14/      4.08/      4.05
.E3 :0625:/      4.00/      3.97/      3.92/      3.87
.E4 :0626:/      3.81/      3.74/      3.68/      3.61
.E5 :0627:/      3.55/      3.49/      3.45/      3.43
.E6 :0628:/      3.41

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:
:VAUGHN MT - MUDDY CREEK      HSA - TFX
:FLOOD STAGE 7.0      FCST ISSUANCE STAGE 6.0

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:LATEST STAGE 4.0 FT AT 1430Z ON 0623
.ER MDYM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      4.1/      4.1/      4.1
.E2 :0624:/      4.2/      4.2/      4.2/      4.3
.E3 :0625:/      4.3/      4.3/      4.3/      4.4
.E4 :0626:/      4.4/      4.4/      4.4/      4.5
.E5 :0627:/      4.5/      4.5/      4.5/      4.5
.E6 :0628:/      4.5
.ER MDYM8      20110623 Z DC201106231504/DH18/QRIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      0.17/      0.18/      0.18
.E2 :0624:/      0.19/      0.19/      0.20/      0.20
.E3 :0625:/      0.20/      0.21/      0.21/      0.22
.E4 :0626:/      0.22/      0.22/      0.23/      0.23
.E5 :0627:/      0.23/      0.24/      0.24/      0.24
.E6 :0628:/      0.24

```

:VAUGHN MT - SUN RIVER HSA - TFX
:FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.0

:

:LATEST STAGE 4.2 FT AT 1400Z ON 0623

.ER VAUM8 20110623 Z DC201106231504/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 4.3/ 4.3/ 4.4

.E2 :0624:/ 4.4/ 4.4/ 4.4/ 4.4

.E3 :0625:/ 4.4/ 4.3/ 4.3/ 4.3

.E4 :0626:/ 4.3/ 4.3/ 4.2/ 4.2

.E5 :0627:/ 4.2/ 4.2/ 4.1/ 4.1

.E6 :0628:/ 4.1

.ER VAUM8 20110623 Z DC201106231504/DH18/QRIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 4.14/ 4.23/ 4.32

.E2 :0624:/ 4.39/ 4.44/ 4.41/ 4.37

.E3 :0625:/ 4.32/ 4.28/ 4.24/ 4.20

.E4 :0626:/ 4.16/ 4.11/ 4.06/ 4.00

.E5 :0627:/ 3.94/ 3.87/ 3.82/ 3.77

.E6 :0628:/ 3.73

:

:DUTTON MT 10NE - TETON RIVER HSA - TFX

:FLOOD STAGE 9.0 FCST ISSUANCE STAGE 8.0

:

:LATEST STAGE 4.8 FT AT 1430Z ON 0623

.ER DTTM8 20110623 Z DC201106231504/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 4.7/ 4.7/ 4.7

.E2 :0624:/ 4.7/ 4.7/ 4.7/ 4.7

.E3 :0625:/ 4.7/ 4.8/ 4.8/ 4.8

.E4 :0626:/ 4.8/ 4.7/ 4.7/ 4.6

.E5 :0627:/ 4.6/ 4.5/ 4.4/ 4.4

.E6 :0628:/ 4.3

.ER DTTM8 20110623 Z DC201106231504/DH18/QRIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 0.99/ 0.98/ 0.97

.E2 :0624:/ 0.96/ 0.96/ 0.96/ 0.97

.E3 :0625:/ 0.98/ 0.99/ 1.00/ 1.00

.E4 :0626:/ 0.99/ 0.98/ 0.95/ 0.93

.E5 :0627:/ 0.90/ 0.87/ 0.84/ 0.82

.E6 :0628:/ 0.80

:

:SHELBY MT - MARIAS RIVER HSA - TFX

:FLOOD STAGE 9.0 FCST ISSUANCE STAGE 8.0

:

:LATEST STAGE 7.2 FT AT 1430Z ON 0623

.ER SHLM8 20110623 Z DC201106231504/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 7.2/ 7.1/ 7.1

.E2 :0624:/ 7.0/ 7.0/ 7.1/ 7.1

.E3 :0625:/ 7.1/ 7.1/ 7.0/ 7.0

.E4 :0626:/ 7.0/ 6.9/ 6.9/ 6.8

.E5 :0627:/ 6.8/ 6.7/ 6.7/ 6.7

.E6 :0628:/ 6.6

.ER SHLM8 20110623 Z DC201106231504/DH18/QRIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 4.77/ 4.65/ 4.55


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.E2 :0624:/      4.49/      4.49/      4.52/      4.55
.E3 :0625:/      4.56/      4.54/      4.50/      4.44
.E4 :0626:/      4.37/      4.29/      4.21/      4.13
.E5 :0627:/      4.05/      3.98/      3.92/      3.86
.E6 :0628:/      3.81
:
:LANDUSKY MT - MISSOURI RIVER      HSA - TFX
:FLOOD STAGE 25.0      FCST ISSUANCE STAGE 23.0
:
:LATEST STAGE 25.4 FT AT 1400Z ON 0623
: FALL BELOW FLOOD STAGE ON 06/25/2011 AROUND 13Z
.ER LDKM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      25.4/      25.4/      25.3
.E2 :0624:/      25.3/      25.2/      25.2/      25.1
.E3 :0625:/      25.0/      24.9/      24.9/      24.9
.E4 :0626:/      24.9/      24.8/      24.8/      24.8
.E5 :0627:/      24.8/      24.7/      24.7/      24.7
.E6 :0628:/      24.7
:
:HARLOWTON MT - MUSSELSHELL RIVER      HSA - BYZ
:FLOOD STAGE 7.0      FCST ISSUANCE STAGE 6.0
:
:LATEST STAGE 5.9 FT AT 1400Z ON 0623
.ER HLWM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      5.8/      5.8/      5.8
.E2 :0624:/      5.8/      5.8/      5.9/      5.9
.E3 :0625:/      5.9/      5.9/      5.8/      5.8
.E4 :0626:/      5.7/      5.7/      5.6/      5.6
.E5 :0627:/      5.6/      5.5/      5.5/      5.5
.E6 :0628:/      5.4
:
:SHAWMUT MT - MUSSELSHELL RIVER      HSA - BYZ
:
:
:LATEST STAGE 6.7 FT AT 1430Z ON 0623
.ER SHAM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      6.7/      6.7/      6.7
.E2 :0624:/      6.6/      6.6/      6.6/      6.6
.E3 :0625:/      6.6/      6.6/      6.6/      6.6
.E4 :0626:/      6.6/      6.5/      6.5/      6.4
.E5 :0627:/      6.4/      6.3/      6.3/      6.2
.E6 :0628:/      6.2
:
:LAVINA MT - MUSSELSHELL RIVER      HSA - BYZ
:
:
:LATEST ESTIMATED STAGE 8.1 FT AT 1200Z ON 0623
.AR LVNM8      20110623 DH1200/HGIPX 8.10E
.ER LVNM8      20110623 Z DC201106231504/DH18/HGIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      8.0/      8.0/      8.0
.E2 :0624:/      8.0/      7.9/      7.9/      7.8
.E3 :0625:/      7.8/      7.7/      7.7/      7.7
.E4 :0626:/      7.7/      7.7/      7.6/      7.6

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.E5 :0627:/      7.5/      7.5/      7.4/      7.3
.E6 :0628:/      7.2
:
:ROUNDUP MT - MUSSELSHELL RIVER      HSA - BYZ
:FLOOD STAGE 10.0      FCST ISSUANCE STAGE 8.0
:
:LATEST STAGE 8.5 FT AT 1400Z ON 0623
.ER RUPM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      8.5/      8.4/      8.4
.E2 :0624:/      8.3/      8.3/      8.3/      8.2
.E3 :0625:/      8.2/      8.1/      8.1/      8.0
.E4 :0626:/      8.0/      7.9/      7.9/      7.8
.E5 :0627:/      7.8/      7.8/      7.7/      7.7
.E6 :0628:/      7.6

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:
:MUSSELSHELL MT - MUSSELSHELL RIVER      HSA - BYZ
:
:
:LATEST STAGE 10.7 FT AT 1430Z ON 0623
.ER MUSM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      10.6/      10.6/      10.5
.E2 :0624:/      10.4/      10.3/      10.3/      10.2
.E3 :0625:/      10.1/      10.0/      10.0/      9.9
.E4 :0626:/      9.8/      9.7/      9.7/      9.6
.E5 :0627:/      9.5/      9.4/      9.4/      9.4
.E6 :0628:/      9.3

```

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:
:MOSBY MT - MUSSELSHELL RIVER      HSA - GGW
:FLOOD STAGE 8.0      FCST ISSUANCE STAGE 7.0
:
:LATEST STAGE 10.6 FT AT 1445Z ON 0623
.ER MSBM8      20110623 Z DC201106231504/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      10.6/      10.5/      10.5
.E2 :0624:/      10.4/      10.3/      10.2/      10.1
.E3 :0625:/      10.1/      10.0/      9.9/      9.8
.E4 :0626:/      9.7/      9.6/      9.5/      9.4
.E5 :0627:/      9.3/      9.2/      9.2/      9.1
.E6 :0628:/      9.0

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:COMMENT
:
:
:
:
:

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$$

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:ajm

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:...END of MESSAGE...

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ZCZC MKCRVFM DT DEF
TTAA00 KKRF DDHHMM
RVFM DT

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1515Z THU JUN 23 2011

: FORECAST GROUP IS MIDDAK RES

```
: ==> This forecast includes obsd precip & 24 hours of QPF <==
```

:OAHE RES SD - MISSOURI RIVER RESERVOIR INFLOW FORECAST

: LATEST ESTIMATED DISCHARGE 168.54 KCFS AT 1200Z ON 0623

.ER PIES2 20110623 Z DC201106231515/DH18/QIIFF/DIH6

:QPF	FCST	12Z	18Z	0Z	6Z
.E1	:0623:	/	168.87/	169.15/	169.24
.E2	:0624:/	169.07/	168.61/	167.92/	167.07
.E3	:0625:/	166.14/	165.27/	164.47/	163.68
.E4	:0626:/	162.90/	162.14/	161.40/	160.68
.E5	:0627:/	159.99/	159.35/	158.73/	158.14
.E6	:0628:/	157.57/	157.04/	156.54/	156.08
.E7	:0629:/	155.68/	155.33/	155.02/	154.75
.E8	:0630:/	154.51/	154.28/	154.09/	153.92
.E9	:0701:/	153.78/	153.67/	153.57/	153.48
.E10	:0702:/	153.40/	153.32/	153.25/	153.20
.E11	:0703:/	153.17/	153.11/	153.05/	153.00
.E12	:0704:/	152.95/	152.90/	152.86/	152.82
.E13	:0705:/	152.77/	152.73/	152.69/	152.65
.E14	:0706:/	152.61/	152.58/	152.55/	152.53
.E15	:0707:/	152.51			

: COMMENT

From:
Sent:
To:

Thursday, June 23, 2011 10:15 AM
CENWO-EOC NWO; Bertino, John J Jr NWO; [REDACTED]
[REDACTED]; 'bruce.sullivan@noaa.gov'; 'bruce.terry@noaa.gov'; [REDACTED]
[REDACTED] DLL-CENWO-EOC CMT-ALL; [REDACTED]
[REDACTED] Farhat, Jody S NWD02; Farmer, Monique L NWO; [REDACTED]
[REDACTED]; [REDACTED]; [REDACTED]; Johnston, Paul T
HQ@ NWO; [REDACTED]
[REDACTED]
[REDACTED]
'michael.eckert@noaa.gov'; [REDACTED]
M NWO; 'robert.kelly@noaa.gov'; Ruch, Robert J COL NWO; [REDACTED]
[REDACTED] NWO; Tipton, Robert A Col NWD; [REDACTED]
[REDACTED] Williamson, Eileen L NWO; [REDACTED]
[REDACTED] Blechinger, Erik T NWO; [REDACTED]
[REDACTED] Oldham, Margaret NWO; [REDACTED]
[REDACTED]

Subject: Riverwatch Daily Update June 23, 2011 (UNCLASSIFIED)
Attachments: Flood_Fight_Storyboard_23JUN.docx

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Mainstem Reservoir Bulletin (Updated 23 Jun; 0900 CDT)

Fort Peck (In operation since 1940)
Midnight Elevation
* 2251.7 ft msl
* 24-hr Change (-0.1 ft)

Daily Avg. Inflow
* 46,000 cfs (22 Jun)
* 47,000 cfs (21 Jun)

Daily Avg. Release
* 59,700 cfs (22 Jun)
* 60,200 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)
* 2234 ft msl - 2246 ft msl

Exclusive Flood Ctrl Zone (Elevation)
* 2246 ft msl - 2250 ft msl

Top of Spillway Gates (closed)
* 2250 ft msl

Planned Scheduled Releases (Subject to Change)
* Releases have been decreased to 60,000 cfs.
* Reservoir is currently using surcharge storage above the exclusive flood control zone.

Record Pool Elevation (Year)
* 2251.6 msl (1975)

Record Flow (Year)

* 35,000 cfs (1975)

Projected Record Flow (Date)

* 65,000 cfs (Mid June)

Garrison (In operation since 1955)

Midnight Elevation

* 1854.4 ft msl

* 24-hr Change (+0.1 ft)

Daily Avg. Inflow

* 169,000 cfs (22 Jun)

* 192,000 cfs (21 Jun)

Daily Avg. Release

* 150,500 cfs (22 Jun)

* 150,400 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1837.5 ft msl - 1850 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1850 ft msl - 1854 ft msl

Top of Spillway Gates (closed)

* 1854 ft msl

River Stage (Bismarck)

* 18.88 (0845 CDT 23 Jun)

* Flood stage - 16 ft

* 18.89 (0715 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

* Releases have been stepped up to 150,000 cfs.

* Reservoir is currently using surcharge storage above the exclusive flood control zone.

* Spillway gates are being used to pass floodwaters.

Record Pool Elevation (Year)

* 1854.8 msl (1975)

Record Flow (Year)

* 65,000 cfs (1975)

Projected Record Flow (Date)

* 150,000 cfs (Mid June)

Oahe (In operation since 1962)

Midnight Elevation

* 1619.3 ft msl

* 24-hr Change (-0.0 ft)

Daily Avg. Inflow

* 178,000 cfs (22 Jun)

* 218,000 cfs (21 Jun)

Daily Avg. Release

- * 150,300 cfs (22 Jun)
- * 153,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1607.5 ft msl - 1620 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1617 ft msl - 1620 ft msl

Top of Spillway Gates (closed)

- * 1620 ft msl

River Stage (Pierre)

- * 19.4 (0830 CDT 23 Jun)
- * Flood stage - 15 ft
- * 19.71 (0731 CDT 22 Jun)

Planned Scheduled Releases (Subject to Change)

- * Releases will be stepped up again to 160,000 cfs by late June.
- * Reservoir is currently in the exclusive flood control zone.
- * Reservoir will peak within a foot of the top of the closed spillway gates at 1619 feet.

Record Pool Elevation (Year)

- * 1618.7 msl (1995)

Record Flow (Year)

- * 59,000 cfs (1997)

Projected Record Flow (Date)

- * 160,000 cfs (Mid June)

Big Bend (In operation since 1964)

Midnight Elevation

- * 1421.5 ft msl
- * 24-hr Change (+0.5 ft)

Daily Avg. Inflow

- * 179,000 cfs (22 Jun)
- * 195,000 cfs (21 Jun)

Daily Avg. Release

- * 164,600 cfs (22 Jun)
- * 162,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

- * 1420 ft msl - 1423 ft msl

Exclusive Flood Ctrl Zone (Elevation)

- * 1422 ft msl - 1423 ft msl

Top of Spillway Gates (closed)

- * 1423 ft msl

Planned Scheduled Releases (Subject to Change)

- * Releases have been stepped up to 165,000 cfs.
- * Reservoir will remain essentially level at 1420 feet.

Record Pool Elevation (Year)

* 1422.1 msl (1991)

Record Flow (Date)

* 74,000 cfs (1997)

Projected Record Flow (Date)

* 165,000 cfs (Late June)

Fort Randall (In operation since 1953)

Midnight Elevation

* 1369.1 ft msl

* 24-hr Change (+1.1 ft)

Daily Avg. Inflow

* 198,000 cfs (22 Jun)

* 213,000 cfs (21 Jun)

Daily Avg. Release

* 138,300 cfs (22 Jun)

* 139,600 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1350 ft msl - 1375 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1365 ft msl - 1375 ft msl

Top of Spillway Gates (closed)

* 1375 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 157,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1372.2 msl (1997)

Record Flow (Date)

* 67,000 cfs (1997)

Projected Record Flow (Date)

* 157,000 cfs (Late June)

Gavins Point (In operation since 1955)

Midnight Elevation

* 1208.3 ft msl

* 24-hr Change (+0.2 ft)

Daily Avg. Inflow

* 157,000 cfs (22 Jun)

* 159,000 cfs (21 Jun)

Daily Avg. Release

* 154,300 cfs (22 Jun)

* 150,900 cfs (21 Jun)

Annual Flood Ctrl & Multi-Use Zone (Elevation)

* 1204.5 ft msl - 1210 ft msl

Exclusive Flood Ctrl Zone (Elevation)

* 1208 ft msl - 1210 ft msl

Top of Spillway Gates (closed)

* 1210 ft msl

Planned Scheduled Releases (Subject to Change)

* Releases will be stepped up to 160,000 cfs by late June.

* Reservoir is currently in the exclusive flood control zone.

Record Pool Elevation (Year)

* 1209.7 msl (2010)

Record Flow (Date)

* 70,000 cfs (1997)

Projected Record Flow (Date)

* 160,000 cfs (Late June)

Release and inflow figures include a + or - 1 percent variation

Source of information: <http://www.nwd-mr.usace.army.mil/rcc>

Missouri River Mainstem 24-Hour Forecast Conditions (Updated 23 Jun; 0900 CDT)

24-hr forecast (Glasgow, MT)

Today: Sunny, high near 85. Southeast wind 21 to 24 mph, with gusts as high as 30 mph.

Tonight: Scattered showers and t-storms. Some storms could be severe, with large hail, damaging winds and heavy rain. Mostly cloudy, low around 60. Southeast wind 21 to 24 mph becoming calm. Winds could gust as high as 30 mph. Chance of precipitation is 50%.

Friday: Sunny, high near 76. Northwest wind 8 to 11 mph.

24-hr forecast (Williston, ND)

Today: Mostly sunny, high near 76. South wind 6 to 11 mph.

Tonight: 50% chance of showers and t-storms after 1am. Mostly cloudy, low around 58. Southeast wind 10 to 14 mph, with gusts as high as 20 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

Friday: 50% chance of showers and t-storms. Mostly cloudy, high near 74. South wind 6 to 8 mph. New rainfall amounts 0.1 to 0.25 inch, except higher amounts possible in t-storms.

24-hr forecast (Riverdale, ND)

Today: Sunny, high near 73. Calm wind becoming south around 5 mph.

Tonight: Partly cloudy, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 71. South wind 7 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Washburn, ND)

Today: Sunny, high near 72. Calm wind.

Tonight: Mostly clear, low around 54. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 70. South wind 6 to 11 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Bismarck/Mandan, ND)

Today: Sunny, high near 74. Calm wind.

Tonight: Mostly clear, low around 53. Southeast wind around 8 mph.

Friday: 50% chance of showers and t-storms. Partly sunny, high near 72. Southeast wind 6 to 13 mph. New rainfall amounts 0.25 to 0.5 inch possible.

24-hr forecast (Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Ft. Pierre, SD)

Today: Sunny, high near 76. North northwest wind 3 to 5 mph.

Tonight: 20% chance of showers and t-storms after 1am. Partly cloudy, low around 55. East southeast wind 7 to 9 mph.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 81. South southeast wind 11 to 18 mph.

24-hr forecast (Lower Brule, SD)

Today: Sunny, high near 76. North northwest wind around 7 mph.

Tonight: Mostly clear, low around 55. Northeast wind 5 to 8 mph becoming southeast.

Friday: 30% chance of showers and t-storms. Partly sunny, high near 80. South southeast wind 10 to 18 mph.

24-hr forecast (Chamberlain, SD)

Today: Sunny, high near 76. North northwest wind 6 to 8 mph.

Tonight: Mostly clear, low around 54. East southeast wind 5 to 7 mph.

Friday: Slight chance of showers and t-storms after 3pm. Partly sunny, high near 82. South southeast wind 9 to 17 mph, with gusts as high as 26 mph. Chance of precipitation is 20%.

24-hr forecast (Yankton, SD)

Today: Mostly sunny, high near 74. North northwest wind 13 to 15 mph.

Tonight: Clear, low around 52. North wind 6 to 9 mph becoming calm.

Friday: Mostly sunny, high near 78. Light wind becoming southeast 10 to 13 mph.

24-hr forecast (Sioux City, IA)

Today: Mostly cloudy, then gradually becoming sunny, high near 74. North northwest wind 14 to 16 mph.

Tonight: Mostly clear, low around 51. North wind 8 to 11 mph becoming calm.

Friday: Increasing clouds, high near 78. Calm wind becoming southeast 6 to 9 mph.

24-hr forecast (Omaha, NE)

Today: Mostly cloudy, then gradually becoming sunny, high near 75. North northwest wind around 15 mph, with gusts as high as 22 mph.

Tonight: Mostly clear, low around 56. North northwest wind 7 to 10 mph becoming calm.

Friday: Mostly sunny, high near 83. Calm wind becoming east southeast 5 to 8 mph.

Source of information: <http://www.weather.gov/>

Internet: <http://www.nwo.usace.army.mil>

Facebook: <http://www.facebook.com/OmahaUSACE>

Twitter: <http://www.twitter.com/OmahaUSACE>

YouTube: <http://www.youtube.com/OmahaUSACE>

Flickr: <http://www.flickr.com/photos/omahausace>

Missouri River Flooding (Logistics) (Updated 23 Jun; 0900 CDT) Personnel Deployed

7 (Glasgow, MT)

1 (Garrison, ND)

4 (Bismarck, ND)

1 (Fort Yates, ND)

6 (Williston, ND)

5 (Pierre, SD)

2 (Kansas City, MO)

2 (S. Sioux City, NE)

1 (Onawa, IA)

16 (Missouri River Survey - 7 teams)

1 (Lincoln, NE)

4 (Hamburg, IA)

Equipment Deployed

HESCO (3' and 4')

Issued: 74,270 LF

On Hand: 35,700 LF

Projected Outstanding Requirements: 35,000 LF

Sandbags

Issued: 14,637,000

On Hand: 6,923,500

Projected Outstanding Requirements: 6.5 M

Poly Rolls

Issued: 2,836 rolls

On Hand: 1,987 rolls

Projected Outstanding Requirements: 1,500 rolls

Pumps

Issued: 48 pumps

On Hand: 9 pumps (8 - serviceable)

On Hand: 2 - 8" diesel pumps available; 5 - PTO pumps "on hold" for emergency response; 1 - 16" PTO pump available

Slingbags

On Hand: 1,025 slingbags (2K lbs each)

Heavybags

On Hand: 6,420 heavybags (35x35x35 each)

Geotextile

On Hand: 4 rolls (16' x 500')

Additional Supplies due in:

1 PTO pump awaiting parts/repair

Source of information: CMT Brief (22 Jun 11)

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:05 AM
To: Farhat, Jody S NWD02
Subject: Missouri River Forecast

ZCZC MKCCRFMOM LSX,EAX,SGF,KRF
TTAA00 KKRK DDHHMM

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1500Z Thu 23 Jun 2011

*** CONTINGENCY FORECAST WITH NO QPF ***

: THIS FORECAST HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

.E NEBN1 20110623 DC201106231500/DH18/HGIC9ZZ/DIH06/

.E1 27.8/ 27.8/ 27.8/ 27.7/
.E1 27.6/ 27.6/ 27.5/ 27.4/
.E1 27.4/ 27.3/ 27.3/ 27.3/
.E1 27.2/ 27.2/ 27.1/ 27.1/
.E1 27.1/ 27.1/ 27.0/ 27.0/
.E1 27.0/ 27.0/ 27.0/ 27.0/
.E1 27.0/ 27.0/ 27.0/ 27.0/
.E1 27.0/ 27.3/ 27.3/ 27.3/
.E1 27.3/ 27.2/ 27.2/ 27.2/
.E1 27.2/ 27.1/ 27.1/ 27.1/
.E1 27.1/ 27.1/ 27.0/ 27.0/
.E1 27.0/ 27.0/ 27.0/ 27.0/
.E1 27.1/ 27.1/ 27.1/ 27.1/
.E1 27.1/ 27.1/ 27.1/ 27.0/

.E KCDM7 20110623 DC201106231500/DH18/HGIC9ZZ/DIH06/

.E1 27.5/ 27.8/ 28.1/ 28.4/
.E1 28.6/ 28.9/ 29.1/ 29.4/
.E1 29.6/ 29.7/ 29.8/ 29.8/
.E1 29.8/ 29.8/ 29.7/ 29.6/
.E1 29.5/ 29.3/ 29.1/ 28.8/
.E1 28.6/ 28.4/ 28.3/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/
.E1 28.2/ 28.2/ 28.2/ 28.2/

.E HRNM7 20110623 DC201106231500/DH18/HGIC9ZZ/DIH06/

.E1 21.1/ 21.1/ 21.0/ 20.8/
.E1 20.6/ 20.6/ 20.6/ 20.6/
.E1 20.7/ 20.7/ 20.9/ 21.0/
.E1 21.2/ 21.4/ 21.5/ 21.7/

.E1 21.9/ 22.1/ 22.3/ 22.5/
.E1 22.8/ 23.0/ 23.2/ 23.2/
.E1 23.3/ 23.3/ 23.2/ 23.2/
.E1 23.0/ 22.9/ 22.7/ 22.5/
.E1 22.3/ 22.2/ 22.1/ 22.0/
.E1 22.0/ 22.0/ 22.0/ 21.9/
.E1 21.8/ 21.8/ 21.8/ 21.8/
.E1 21.8/ 21.9/ 21.9/ 22.0/
.E1 22.0/ 22.1/ 22.1/ 22.1/
.E1 22.2/ 22.2/ 22.2/ 22.2/

\$\$

NNNN

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 10:05 AM
To: Farhat, Jody S NWD02
Subject: MOTRIBS Flow Forecasts

ZCZC MKCRVFKRF KRF
TTAA00 KKRF 231501
RVFKRF

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO

*** FOR INTERNAL NWS USE ONLY ... NOT FOR PUBLIC RELEASE ***

:CREATED 6/23/2011 1501Z

:

.ER SCOS2 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF
.ER SCOS2 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF
.E1 6.770/ 6.748/ 6.741/ 6.752/ 6.784/ 6.837/ 6.911/ 7.010/
.E2 7.134/ 7.282/ 7.450/ 7.634/ 7.826/ 8.024/ 8.224/ 8.422/
.E3 8.612/ 8.790/ 8.950/ 9.092/ 9.229/ 9.344/ 9.436/ 9.507/
.E4 9.557/ 9.587/ 9.598/ 9.589/

.ER AKRI4 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF
.ER AKRI4 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF
.E1 12.676/ 13.206/ 13.780/ 14.332/ 14.758/ 15.024/ 15.111/ 15.069/
.E2 14.929/ 14.682/ 14.341/ 13.705/ 12.754/ 11.567/ 10.437/ 9.533/
.E3 8.842/ 8.272/ 7.690/ 7.205/ 6.903/ 6.703/ 6.550/ 6.431/
.E4 6.336/ 6.251/ 6.173/ 6.076/

.ER TURI4 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF
.ER TURI4 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF
.E1 10.030/ 9.696/ 9.316/ 8.863/ 8.825/ 8.660/ 8.403/ 8.117/
.E2 7.844/ 7.612/ 7.433/ 7.303/ 7.214/ 7.161/ 7.144/ 7.170/
.E3 7.244/ 7.366/ 7.522/ 7.693/ 7.859/ 8.013/ 8.152/ 8.265/
.E4 8.326/ 8.306/ 8.185/ 7.970/

.ER LOUN1 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF
.ER LOUN1 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF
.E1 24.557/ 22.606/ 22.430/ 22.573/ 22.332/ 20.974/ 20.327/ 20.323/
.E2 19.755/ 18.023/ 16.752/ 16.923/ 17.179/ 16.738/ 16.631/ 17.361/
.E3 17.866/ 17.522/ 17.236/ 17.610/ 17.840/ 17.360/ 16.806/ 16.852/
.E4 16.757/ 16.035/ 15.433/ 15.428/

.ER HMBI4 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF
.ER HMBI4 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF
.E1 6.996/ 6.469/ 5.733/ 5.085/ 4.653/ 4.330/ 4.072/ 3.858/
.E2 3.671/ 3.508/ 3.366/ 3.241/ 3.132/ 3.035/ 2.949/ 2.872/
.E3 2.803/ 2.742/ 2.686/ 2.636/ 2.590/ 2.549/ 2.511/ 2.476/
.E4 2.444/ 2.414/ 2.386/ 2.360/

.ER GRMM7 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF
.ER GRMM7 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF
.E1 1.015/ 0.909/ 0.871/ 0.763/ 0.639/ 0.556/ 0.497/ 0.453/
.E2 0.421/ 0.398/ 0.381/ 0.368/ 0.358/ 0.350/ 0.344/ 0.338/

.E3	0.333/	0.329/	0.325/	0.321/	0.318/	0.315/	0.311/	0.308/
.E4	0.305/	0.302/	0.299/	0.297/				
.ER SSTM7 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER SSTM7 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	1.788/	1.512/	1.266/	1.034/	0.923/	0.788/	0.659/	0.531/
.E2	0.482/	0.450/	0.426/	0.404/	0.385/	0.371/	0.360/	0.351/
.E3	0.344/	0.338/	0.333/	0.328/	0.324/	0.320/	0.317/	0.313/
.E4	0.310/	0.307/	0.305/	0.304/				
.ER DSOK1 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER DSOK1 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	5.840/	5.639/	5.465/	5.333/	5.223/	5.125/	5.027/	4.919/
.E2	4.802/	4.685/	4.582/	4.499/	4.441/	4.404/	4.381/	4.367/
.E3	4.354/	4.340/	4.322/	4.298/	4.270/	4.239/	4.207/	4.176/
.E4	4.145/	4.113/	4.081/	4.048/				
.ER SNZM7 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER SNZM7 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	4.747/	4.269/	4.003/	3.810/	3.663/	3.536/	3.456/	3.265/
.E2	3.081/	2.884/	2.718/	2.561/	2.439/	2.336/	2.241/	2.153/
.E3	2.069/	1.990/	1.913/	1.853/	1.796/	1.751/	1.713/	1.680/
.E4	1.651/	1.625/	1.601/	1.579/				
.ER PRIM7 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER PRIM7 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	3.154/	2.770/	2.476/	2.203/	1.946/	1.757/	1.686/	1.715/
.E2	1.800/	1.881/	1.965/	2.006/	2.013/	2.001/	1.967/	1.920/
.E3	1.873/	1.825/	1.774/	1.728/	1.690/	1.658/	1.623/	1.590/
.E4	1.565/	1.543/	1.517/	1.491/				
.ER STTM7 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER STTM7 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	10.515/	6.712/	6.340/	6.414/	5.746/	4.461/	3.808/	3.785/
.E2	3.766/	3.751/	3.738/	3.727/	3.718/	3.711/	3.705/	3.699/
.E3	5.820/	10.066/	12.187/	12.183/	12.180/	12.178/	12.175/	12.173/
.E4	12.170/	12.168/	12.166/	12.164/				
.ER RIFM7 0623 Z DH18/DC201106231501/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER RIFM7 0623 Z DH18/DC201106231501/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	2.626/	2.562/	2.534/	2.472/	2.425/	2.360/	2.294/	2.220/
.E2	2.145/	2.082/	2.029/	1.985/	1.947/	1.915/	1.888/	1.864/
.E3	1.844/	1.825/	1.809/	1.793/	1.779/	1.765/	1.752/	1.739/
.E4	1.727/	1.715/	1.704/	1.693/				

:
:END OF MESSAGE

NNNN


From: Anderson, G Witt NWD
Sent: Thursday, June 23, 2011 9:59 AM
To: Farhat, Jody S NWD02
Subject: Todd Porter ltr

Can you forward to me our response?

Message sent via my BlackBerry Wireless Device

[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 9:57 AM
To: DLL-CENWD ALLEMPL (BB4); DLL-CENWD ALLEMPL (OMA)
Subject: FW: StrongPoint - USACE's Missouri River Flood Fight
Attachments: StrongPoint - Missouri River Flood Fight v2i31.pdf

FYI

-----Original Message-----

From: The Temple Sends
Sent: Wednesday, June 22, 2011 1:20 PM
USACE Leaders,

Prolonged heavy rain, coupled with melting record snowpack, is causing historic water flows, reservoir releases and flooding along the Missouri River and many of its tributaries throughout Montana, North and South Dakota, Nebraska, Iowa, Kansas and Missouri.

The U.S. Army Corps of Engineers' six dams - Fort Peck (Mont.); Garrison Dam (N.D.); Oahe Dam, Big Bend Dam, and Fort Randall Dam (S.D.); and Gavins Point Dam (S.D./Neb.) - are operating as designed. The system is protecting the public from unregulated flows, which occur when uncontrolled flood waters flow in a spillway and result in significantly more damage.

USACE is thoroughly engaged throughout the Missouri River Basin, dispatching teams of experts to construct temporary levees, issuing millions of sandbags and numerous pumps to support local flood fight efforts, avoid loss of life, minimize damages and help those communities affected by the flood. This special issue of StrongPoint provides current information, key messages, and facts and figures for your use in answering questions and communicating with our many stakeholders and audiences about USACE's flood fight efforts along the Missouri River. Please share this information widely with your staff. We hope you find this information useful. For those reading on mobile devices, the text is pasted below.

If you have comments or suggestions, please send them to [REDACTED], Director of USACE Public Affairs, at [REDACTED] or [REDACTED] at [REDACTED]@usace.army.mil.

v/r

Temple

STRONGPOINT
U.S. Army Corps of Engineers
June 20, 2010

USACE's Missouri River Flood Fight

"This will be a long, sometimes frustrating and intense effort as the situation evolves and as we work together to avoid loss of life, minimize damage and help communities deal with the situation. The Corps is committed to doing its best in close collaboration with city, county, state and federal agencies ... as we address this daunting challenge."

- Brig. Gen. John McMahon, Commander,

USACE Northwestern Division

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USACE also has dispatched teams of experts all along the basin to construct temporary levees. In addition, the Corps has issued millions of sandbags and numerous pumps to support local flood fight efforts, avoid loss of life, minimize damages and help those communities affected by the flood. USACE is coordinating closely with city, county, state and federal agencies, the Tribes and Congressional representatives and will continue to assist communities throughout the duration of the flood.

Background

USACE's releases from Missouri River dams during fall and winter of 2010 were above normal in order to evacuate all flood waters from 2010, the third highest water year on record in the Missouri River Basin. By Jan. 28, 2011, the full capacity of the reservoir system was available. Beginning in early May 2011, heavy snow in the Great Plains; extraordinary rainfall in eastern Montana, northern Wyoming and the western Dakotas (300 percent of normal); and additional mountain snowpack accumulating to record levels along with a delayed melt, all contributed to the unprecedented level of water in the Missouri River Basin. USACE's reservoirs captured the record May runoff, which afforded people downstream time to prepare for the higher than normal releases.

Missouri River Master Manual

The Missouri River Mainstem Reservoir System is operated in accordance with the Master Manual, a water control plan for the eight Congressionally authorized purposes. The Manual helps guide how much water should be released, when, and for how long from the six reservoirs for the benefit of the entire Missouri River basin. One of the primary purposes is reducing risks from floods to people, homes and businesses. The reservoirs capture spring and summer runoff and allow the USACE to manage releases throughout the year to accommodate the other seven purposes: navigation, irrigation, water supply, hydropower, fish and wildlife, recreation, and water quality.

Key Messages

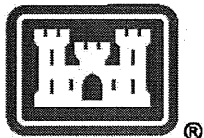
- * Public safety is the top priority for USACE's Flood Risk Management Program.
- * USACE spends \$1.6 billion annually on its Flood Risk Management program of coastal and riverine projects centered around a watershed, life cycle approach of preparation, response, recovery, and mitigation.
- * As part of USACE's comprehensive dam safety program, each dam undergoes daily, yearly and periodic (every 5 years) inspections to ensure the safety of these structures.
- * The Missouri River reservoir system, which spans 1770 miles and includes six dams and reservoirs, is operated in accordance with the Missouri River Master Manual to provide flood risk reduction for communities from Fort Peck, Mont., to St. Louis.

Facts & Figures

- * Approximately 740 personnel are currently supporting the Missouri River flood fight.
- * USACE has issued millions of sandbags and numerous pumps to support local flood fight efforts, avoid loss of life, minimize damages and help impacted communities.
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* In 2010, USACE's Flood Damage Reduction projects helped prevent \$23.1 billion in flood-related damages.

* Get all the latest flood fight information on Facebook at:
<https://www.facebook.com/?ref=logo#!/OperationMightyMO>



USACE's Missouri River Flood Fight

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- Get all the latest flood fight information on Facebook at: <https://www.facebook.com/?ref=logo#!/OperationMightyMO>

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 9:50 AM
To: Farhat, Jody S NWD02
Subject: Yellowstone Forecast

ZCZC MKCRVFYEL DEF
TTAA00 KKRF DDHHMM
RVFYEL

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1445Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS YELLOWSTONE WITH EXTRAS

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

: Please note ... Crest forecasts provided are based on 14 days of
: forecast temperatures and should not be assumed to be the absolute
: crests for the snowmelt season.

RIVER/STATION	FS	TDY	F O R E C A S T
YELLOWSTONE RIVER			
CORWIN SPRINGS MT	11.0	9.3	CREST NEAR 10.2 FT 06/24 AM 2nd CREST NEAR 10.1 FT 06/25 AM
LIVINGSTON MT 5S	9.0	9.0	CREST NEAR 9.1 FT 06/23 PM 2nd CREST NEAR 9.7 FT 06/24 PM BOULDER RIVER
BIG TIMBER MT	7.0	6.3	CREST NEAR 7.3 FT 06/24 PM
STILLWATER RIVER			
ABSAROOKEE MT	6.5	5.4	CREST NEAR 6.1 FT 06/24 PM
ROCK CREEK			
RED LODGE MT	7.5	6.6	CREST NEAR 7.0 FT 06/24 AM
CLRKS FK YELLOWSTNE RIVER			
BELFRY MT	7.5	7.1	CREST NEAR 7.9 FT 06/24 AM 2nd CREST NEAR 6.5 FT 06/26 AM YELLOWSTONE RIVER
BILLINGS MT	13.0	10.6	CREST NEAR 12.9 FT 06/25 PM
BIGHORN RIVER			
BIGHORN MT 1SW	9.0	8.1	CREST NEAR 8.1 FT 06/23 PM
YELLOWSTONE RIVER			
FORSYTH MT	10.0	9.3	CREST NEAR 11.8 FT 06/27 AM
TONGUE RIVER			
DECKER MT 1SE		7.5	CREST NEAR 8.2 FT 06/24 AM 2nd CREST NEAR 8.3 FT 06/25 PM
BIRNEY MT	6.0	6.1	CREST NEAR 7.3 FT 06/25 PM
ASHLAND MT	9.5	9.9E	CREST NEAR 10.6 FT 06/26 PM
YELLOWSTONE RIVER			
MILES CITY MT	13.0	11.8	CREST NEAR 14.2 FT 06/27 AM
GLENDDIVE MT	53.5	50.8	CREST NEAR 52.7 FT 06/28 AM

SIDNEY MT 19.0 15.5 CREST NEAR 17.9 FT 06/29 AM

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:
:
:
:

:YELLOWSTON LK WY BLO - YELLOWSTONE RIVER HSA - RIW
:FLOOD STAGE 9.0 FCST ISSUANCE STAGE 8.0

:LATEST STAGE 6.8 FT AT 1330Z ON 0623

.ER YLOW4 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 6.9/ 7.0/ 7.0

.E2 :0624:/ 7.0/ 7.0/ 7.1/ 7.1

.E3 :0625:/ 7.1/ 7.2/ 7.2/ 7.2

.E4 :0626:/ 7.2/ 7.2/ 7.3/ 7.3

.E5 :0627:/ 7.3/ 7.3/ 7.3/ 7.3

.E6 :0628:/ 7.3

.ER YLOW4 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 5.69/ 5.73/ 5.77

.E2 :0624:/ 5.82/ 5.87/ 5.93/ 5.98

.E3 :0625:/ 6.04/ 6.09/ 6.13/ 6.18

.E4 :0626:/ 6.22/ 6.25/ 6.29/ 6.32

.E5 :0627:/ 6.34/ 6.37/ 6.40/ 6.43

.E6 :0628:/ 6.45

:TOWER FALLS WY - LAMAR RIVER HSA - RIW
:FLOOD STAGE 15.0 FCST ISSUANCE STAGE 13.0

:LATEST STAGE 8.9 FT AT 1415Z ON 0623

.ER TFLW4 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 8.2/ 8.3/ 9.8

.E2 :0624:/ 9.7/ 8.4/ 8.3/ 9.3

.E3 :0625:/ 8.9/ 8.1/ 8.2/ 8.1

.E4 :0626:/ 7.9/ 7.6/ 7.7/ 7.7

.E5 :0627:/ 7.5/ 7.3/ 7.5/ 7.5

.E6 :0628:/ 7.3

.ER TFLW4 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 9.32/ 9.63/ 13.15

.E2 :0624:/ 12.78/ 9.88/ 9.69/ 11.97

.E3 :0625:/ 10.99/ 9.26/ 9.34/ 9.21

.E4 :0626:/ 8.60/ 8.11/ 8.24/ 8.27

.E5 :0627:/ 7.76/ 7.38/ 7.71/ 7.85

.E6 :0628:/ 7.43

:CORWIN SPRINGS MT - YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 11.0 FCST ISSUANCE STAGE 9.5

:LATEST STAGE 9.3 FT AT 1400Z ON 0623

.AR : CREST : CORM8 20110624 Z DC201106231445/DH12/HGIFFX 10.2 .AR : CREST : CORM8 20110625 Z
DC201106231445/DH12/HGIFFX 10.1

.ER CORM8 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	9.0/	8.9/	9.9
.E2 :0624:/	10.2/	9.7/	9.5/	10.1
.E3 :0625:/	10.1/	9.6/	9.4/	9.4
.E4 :0626:/	9.3/	9.1/	9.0/	9.1
.E5 :0627:/	9.0/	8.8/	8.8/	8.9
.E6 :0628:/	8.9			

.ER CORM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
-----------	-----	-----	----	----

.E1 :0623:	/	23.01/	22.40/	27.05
.E2 :0624:/	28.74/	26.06/	25.34/	27.87
.E3 :0625:/	27.94/	25.80/	25.00/	24.76
.E4 :0626:/	24.34/	23.26/	22.84/	23.20
.E5 :0627:/	23.06/	22.19/	22.00/	22.39
.E6 :0628:/	22.28			

:
:LIVINGSTON MT 5S - YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 9.0 FCST ISSUANCE STAGE 8.0
:

:LATEST STAGE 9.0 FT AT 1345Z ON 0623

.AR : CREST : LIVM8 20110623 Z DC201106231445/DH18/HGIFFX 9.1 .AR : CREST : LIVM8 20110624 Z DC201106231445/DH18/HGIFFX 9.7 .AR : CREST : LIVM8 20110625 Z DC201106231445/DH18/HGIFFX 9.6 .AR : CREST : LIVM8 20110627 Z DC201106231445/DH12/HGIFFX 8.9 .AR : CREST : LIVM8 20110628 Z DC201106231445/DH12/HGIFFX 8.7 .AR : CREST : LIVM8 20110629 Z DC201106231445/DH18/HGIFFX 8.7

: RISE ABOVE FLOOD STAGE ON 06/23/2011 AROUND 16Z

: FALL BELOW FLOOD STAGE ON 06/23/2011 AROUND 23Z

.ER LIVM8 20110623 Z DC201106231445/DH18/HGIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	9.1/	9.0/	8.9
.E2 :0624:/	9.4/	9.7/	9.5/	9.3
.E3 :0625:/	9.5/	9.6/	9.4/	9.2
.E4 :0626:/	9.2/	9.1/	8.9/	8.9
.E5 :0627:/	8.9/	8.8/	8.7/	8.7
.E6 :0628:/	8.7			

.ER LIVM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
-----------	-----	-----	----	----

.E1 :0623:	/	27.18/	26.32/	25.85
.E2 :0624:/	29.22/	31.41/	30.05/	28.98
.E3 :0625:/	30.34/	30.77/	29.31/	28.22
.E4 :0626:/	27.60/	27.14/	26.05/	25.44
.E5 :0627:/	25.62/	25.42/	24.77/	24.41
.E6 :0628:/	24.70			

:
:LIVINGSTON MT 7NE - SHIELDS RIVER HSA - BYZ
:FLOOD STAGE 5.5 FCST ISSUANCE STAGE 5.0
:

:LATEST STAGE 3.9 FT AT 1430Z ON 0623

.ER SLDM8 20110623 Z DC201106231445/DH18/HGIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
-----------	-----	-----	----	----

.E1 :0623:	/	3.9/	3.8/	3.8
.E2 :0624:/	4.0/	4.1/	4.0/	4.0
.E3 :0625:/	3.9/	3.9/	3.8/	3.8
.E4 :0626:/	3.8/	3.7/	3.7/	3.7
.E5 :0627:/	3.7/	3.6/	3.6/	3.6
.E6 :0628:/	3.6			

.ER SLDM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	1.10/	1.03/	1.03
------------	---	-------	-------	------

.E2 :0624:/	1.20/	1.28/	1.23/	1.17
.E3 :0625:/	1.14/	1.10/	1.05/	1.02
.E4 :0626:/	1.00/	0.98/	0.95/	0.92
.E5 :0627:/	0.91/	0.90/	0.88/	0.85
.E6 :0628:/	0.85			

:
:BIG TIMBER MT - BOULDER RIVER HSA - BYZ
:FLOOD STAGE 7.0 FCST ISSUANCE STAGE 6.0

:
:LATEST STAGE 6.3 FT AT 1345Z ON 0623
.AR : CREST : BTMM8 20110624 Z DC201106231445/DH18/HGIFFX 7.3
: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 13Z
: FALL BELOW FLOOD STAGE ON 06/25/2011 AROUND 2Z

.ER BTMM8 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	6.5/	6.3/	6.4
.E2 :0624:/	7.0/	7.3/	7.1/	6.9
.E3 :0625:/	6.8/	6.8/	6.5/	6.4
.E4 :0626:/	6.3/	6.2/	6.1/	5.9
.E5 :0627:/	5.9/	5.9/	5.8/	5.7
.E6 :0628:/	5.7			

.ER BTMM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	4.76/	4.46/	4.59
.E2 :0624:/	5.51/	6.13/	5.72/	5.35
.E3 :0625:/	5.31/	5.19/	4.84/	4.55
.E4 :0626:/	4.44/	4.33/	4.06/	3.86
.E5 :0627:/	3.84/	3.80/	3.60/	3.47
.E6 :0628:/	3.53			

:
:ABSAROCKEY MT - STILLWATER RIVER HSA - BYZ
:FLOOD STAGE 6.5 FCST ISSUANCE STAGE 5.5

:
:LATEST STAGE 5.4 FT AT 1415Z ON 0623
.AR : CREST : SRAM8 20110624 Z DC201106231445/DH18/HGIFFX 6.1

.ER SRAM8 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	5.5/	5.5/	5.5
.E2 :0624:/	5.9/	6.1/	6.1/	6.0
.E3 :0625:/	5.9/	5.9/	5.7/	5.5
.E4 :0626:/	5.4/	5.4/	5.2/	5.1
.E5 :0627:/	5.1/	5.1/	5.0/	4.9
.E6 :0628:/	4.9			

.ER SRAM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	5.57/	5.55/	5.75
.E2 :0624:/	6.75/	7.52/	7.37/	6.97
.E3 :0625:/	6.78/	6.61/	6.21/	5.75
.E4 :0626:/	5.45/	5.21/	4.90/	4.63
.E5 :0627:/	4.52/	4.45/	4.27/	4.10
.E6 :0628:/	4.09			

:
:RED LODGE MT - ROCK CREEK HSA - BYZ
:FLOOD STAGE 7.5 FCST ISSUANCE STAGE 7.0

:
:LATEST STAGE 6.6 FT AT 1404Z ON 0623
.AR : CREST : ROKM8 20110624 Z DC201106231445/DH12/HGIFFX 7.0

.ER ROKM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 6.5/ 6.7/ 7.0
.E2 :0624:/ 7.0/ 6.9/ 6.8/ 6.7
.E3 :0625:/ 6.7/ 6.6/ 6.6/ 6.6
.E4 :0626:/ 6.6/ 6.5/ 6.5/ 6.5
.E5 :0627:/ 6.5/ 6.4/ 6.5/ 6.5
.E6 :0628:/ 6.5

.ER ROKM8 20110623 Z DC201106231445/DH18/QRIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 0.61/ 0.76/ 0.97
.E2 :0624:/ 0.98/ 0.89/ 0.81/ 0.78
.E3 :0625:/ 0.72/ 0.65/ 0.65/ 0.66
.E4 :0626:/ 0.62/ 0.59/ 0.60/ 0.61
.E5 :0627:/ 0.58/ 0.55/ 0.57/ 0.60
.E6 :0628:/ 0.58

:
:BELFRY MT - CLRS FK YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 7.5 FCST ISSUANCE STAGE 6.5

:
:LATEST STAGE 7.1 FT AT 1400Z ON 0623

.AR : CREST : BFYM8 20110624 Z DC201106231445/DH12/HGIFFX 7.9 .AR : CREST : BFYM8 20110626 Z DC201106231445/DH12/HGIFFX 6.5

: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 6Z

: FALL BELOW FLOOD STAGE ON 06/24/2011 AROUND 21Z

.ER BFYM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 7.0/ 6.9/ 7.5
.E2 :0624:/ 7.9/ 7.7/ 7.3/ 7.2
.E3 :0625:/ 7.2/ 6.9/ 6.6/ 6.5
.E4 :0626:/ 6.5/ 6.3/ 6.1/ 6.1
.E5 :0627:/ 6.2/ 6.0/ 5.8/ 6.0
.E6 :0628:/ 6.1

.ER BFYM8 20110623 Z DC201106231445/DH18/QRIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 8.04/ 7.65/ 9.22
.E2 :0624:/ 10.40/ 9.74/ 8.76/ 8.49
.E3 :0625:/ 8.49/ 7.75/ 7.05/ 6.79
.E4 :0626:/ 6.86/ 6.39/ 5.93/ 6.00
.E5 :0627:/ 6.23/ 5.84/ 5.44/ 5.67
.E6 :0628:/ 6.05

:
:BILLINGS MT - YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 13.0 FCST ISSUANCE STAGE 11.0

:
:LATEST STAGE 10.6 FT AT 1400Z ON 0623

.AR : CREST : BILM8 20110625 Z DC201106231445/DH18/HGIFFX 12.9

.ER BILM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 10.8/ 10.8/ 11.1
.E2 :0624:/ 11.6/ 11.8/ 12.0/ 12.4
.E3 :0625:/ 12.8/ 12.9/ 12.7/ 12.6
.E4 :0626:/ 12.6/ 12.4/ 12.1/ 11.9
.E5 :0627:/ 11.7/ 11.5/ 11.3/ 11.2
.E6 :0628:/ 11.1

.ER BILM8 20110623 Z DC201106231445/DH18/QRIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	40.96/	41.17/	43.30
.E2 :0624:/	46.60/	48.74/	50.13/	53.03
.E3 :0625:/	56.45/	57.07/	55.78/	55.30
.E4 :0626:/	55.00/	53.32/	51.11/	49.32
.E5 :0627:/	47.78/	46.20/	44.76/	44.00
.E6 :0628:/	43.35			

:
:HARDIN MT - LITTLE BIGHORN RIVER HSA - BYZ
:FLOOD STAGE 8.0 FCST ISSUANCE STAGE 7.0
:

:LATEST STAGE 6.0 FT AT 1415Z ON 0623

.ER HRDM8 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	5.9/	5.9/	5.9
.E2 :0624:/	5.9/	5.9/	5.9/	5.9
.E3 :0625:/	5.9/	5.9/	5.8/	5.8
.E4 :0626:/	5.8/	5.7/	5.7/	5.7
.E5 :0627:/	5.7/	5.7/	5.6/	5.6
.E6 :0628:/	5.6			

.ER HRDM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	2.34/	2.32/	2.30
.E2 :0624:/	2.29/	2.30/	2.30/	2.30
.E3 :0625:/	2.29/	2.28/	2.26/	2.24
.E4 :0626:/	2.21/	2.19/	2.18/	2.16
.E5 :0627:/	2.14/	2.13/	2.11/	2.10
.E6 :0628:/	2.08			

:
:BIGHORN MT 1SW - BIGHORN RIVER HSA - BYZ
:FLOOD STAGE 9.0 FCST ISSUANCE STAGE 8.0
:

:LATEST STAGE 8.1 FT AT 1400Z ON 0623

.AR : CREST : BGHM8 20110623 Z DC201106231445/DH18/HGIFFX 8.1

.ER BGHM8 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	8.1/	8.1/	8.0
.E2 :0624:/	7.9/	7.8/	7.8/	7.8
.E3 :0625:/	7.8/	7.8/	7.8/	7.8
.E4 :0626:/	7.8/	7.8/	7.8/	7.8
.E5 :0627:/	7.8/	7.8/	7.8/	7.8
.E6 :0628:/	7.8			

:
:FORSYTH MT - YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 10.0 FCST ISSUANCE STAGE 8.0
:

:LATEST STAGE 9.3 FT AT 1345Z ON 0623

.AR : CREST : FRYM8 20110627 Z DC201106231445/DH06/HGIFFX 11.8

: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 23Z

.ER FRYM8 20110623 Z DC201106231445/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:	/	9.3/	9.3/	9.5
.E2 :0624:/	9.6/	9.8/	10.0/	10.2
.E3 :0625:/	10.4/	10.6/	10.9/	11.2
.E4 :0626:/	11.4/	11.6/	11.8/	11.8
.E5 :0627:/	11.8/	11.7/	11.6/	11.4
.E6 :0628:/	11.2			

.ER FRYM8 20110623 Z DC201106231445/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 51.74/ 52.23/ 53.10
 .E2 :0624:/ 54.44/ 56.03/ 57.68/ 59.33
 .E3 :0625:/ 60.93/ 62.88/ 65.16/ 67.31
 .E4 :0626:/ 69.28/ 71.24/ 72.83/ 73.39
 .E5 :0627:/ 72.98/ 72.19/ 71.16/ 69.67
 .E6 :0628:/ 67.87

:
 :DAYTON MT - TONGUE RIVER HSA - BYZ
 :FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.5

:
 :LATEST STAGE 4.8 FT AT 1400Z ON 0623
 .ER DAYW4 20110623 Z DC201106231445/DH18/HGIFX/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 4.8/ 4.7/ 5.1
 .E2 :0624:/ 5.0/ 4.8/ 4.7/ 5.0
 .E3 :0625:/ 5.0/ 5.0/ 4.9/ 4.8
 .E4 :0626:/ 4.8/ 4.8/ 4.7/ 4.7
 .E5 :0627:/ 4.7/ 4.7/ 4.7/ 4.6
 .E6 :0628:/ 4.7

:
 :DECKER MT 1SE - TONGUE RIVER HSA - BYZ

:
 :LATEST STAGE 7.5 FT AT 1345Z ON 0623
 .AR : CREST : DSLM8 20110624 Z DC201106231445/DH06/HGIFX 8.2 .AR : CREST : DSLM8 20110625 Z
 DC201106231445/DH00/HGIFX 8.3 .AR : CREST : DSLM8 20110629 Z DC201106231445/DH18/HGIFX 6.9
 .ER DSLM8 20110623 Z DC201106231445/DH18/HGIFX/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 7.6/ 8.1/ 8.2
 .E2 :0624:/ 8.0/ 8.1/ 8.3/ 8.1
 .E3 :0625:/ 7.8/ 7.7/ 7.6/ 7.6
 .E4 :0626:/ 7.5/ 7.5/ 7.3/ 7.2
 .E5 :0627:/ 7.2/ 7.2/ 7.1/ 7.0
 .E6 :0628:/ 7.0

:
 :BIRNEY MT - TONGUE RIVER HSA - BYZ
 :FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.0

:
 :LATEST STAGE 6.1 FT AT 1430Z ON 0623
 .AR : CREST : BNYM8 20110625 Z DC201106231445/DH18/HGIFX 7.3
 : FALL BELOW FLOOD STAGE ON 06/28/2011 AROUND 11Z
 .ER BNYM8 20110623 Z DC201106231445/DH18/HGIFX/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623: / 6.1/ 6.1/ 6.2
 .E2 :0624:/ 6.4/ 6.6/ 6.8/ 7.1
 .E3 :0625:/ 7.2/ 7.3/ 7.2/ 7.0
 .E4 :0626:/ 6.7/ 6.6/ 6.5/ 6.5
 .E5 :0627:/ 6.4/ 6.3/ 6.1/ 6.1
 .E6 :0628:/ 6.0

:
 :ASHLAND MT - TONGUE RIVER HSA - BYZ
 :FLOOD STAGE 9.5 FCST ISSUANCE STAGE 8.5

:
 :LATEST ESTIMATED STAGE 9.9 FT AT 1200Z ON 0623 .AR : CREST : ASLM8 20110627 Z
 DC201106231445/DH00/HGIFX 10.6
 : FALL BELOW FLOOD STAGE ON 06/30/2011 AROUND 7Z .AR ASLM8 20110623 DH1200/HGIPX 9.90E

.ER ASLM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 9.9/ 9.8/ 9.8
.E2 :0624:/ 9.8/ 9.7/ 9.7/ 9.8
.E3 :0625:/ 9.9/ 10.0/ 10.1/ 10.3
.E4 :0626:/ 10.5/ 10.6/ 10.6/ 10.5
.E5 :0627:/ 10.3/ 10.2/ 10.1/ 10.0
.E6 :0628:/ 10.0

:
:MILES CITY MT - PUMPKIN CREEK HSA - BYZ
:FLOOD STAGE 11.0 FCST ISSUANCE STAGE 10.0

:
:LATEST STAGE 4.7 FT AT 1345Z ON 0623
.ER PMKM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 4.7/ 4.7/ 4.7
.E2 :0624:/ 4.7/ 4.7/ 4.7/ 4.7
.E3 :0625:/ 4.7/ 4.7/ 4.7/ 4.7
.E4 :0626:/ 4.7/ 4.7/ 4.7/ 4.7
.E5 :0627:/ 4.7/ 4.7/ 4.7/ 4.7
.E6 :0628:/ 4.7

:
:MILES CITY MT - TONGUE RIVER HSA - BYZ
:FLOOD STAGE 11.0 FCST ISSUANCE STAGE 9.0

:
:LATEST STAGE 8.1 FT AT 1400Z ON 0623
.ER MICM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 8.0/ 7.9/ 7.8
.E2 :0624:/ 7.7/ 7.7/ 7.6/ 7.6
.E3 :0625:/ 7.6/ 7.5/ 7.5/ 7.4
.E4 :0626:/ 7.4/ 7.4/ 7.4/ 7.5
.E5 :0627:/ 7.6/ 7.7/ 7.8/ 8.0
.E6 :0628:/ 8.2

:
:MILES CITY MT - YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 13.0 FCST ISSUANCE STAGE 11.0

:
:LATEST STAGE 11.8 FT AT 1400Z ON 0623

.AR : CREST : MILM8 20110627 Z DC201106231445/DH12/HGIFFX 14.2

: RISE ABOVE FLOOD STAGE ON 06/25/2011 AROUND 23Z

: FALL BELOW FLOOD STAGE ON 06/29/2011 AROUND 19Z

.ER MILM8 20110623 Z DC201106231445/DH18/HGIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 11.7/ 11.8/ 11.8
.E2 :0624:/ 11.9/ 12.1/ 12.2/ 12.4
.E3 :0625:/ 12.6/ 12.8/ 13.0/ 13.3
.E4 :0626:/ 13.5/ 13.7/ 13.9/ 14.1
.E5 :0627:/ 14.2/ 14.2/ 14.2/ 14.1
.E6 :0628:/ 13.9

.ER MILM8 20110623 Z DC201106231445/DH18/QRIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 57.80/ 58.04/ 58.55
.E2 :0624:/ 59.42/ 60.61/ 62.11/ 63.71
.E3 :0625:/ 65.31/ 66.88/ 68.73/ 70.90
.E4 :0626:/ 73.05/ 75.04/ 77.02/ 78.73
.E5 :0627:/ 79.59/ 79.52/ 78.99/ 78.20

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.E6 :0628:/      76.97
:
:SUSSEX WY - POWDER RIVER      HSA - RIW
:FLOOD STAGE 11.0      FCST ISSUANCE STAGE 10.0
:
:LATEST STAGE 3.0 FT AT 1415Z ON 0623
.ER SXXW4      20110623 Z DC201106231445/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      2.9/      2.9/      2.9
.E2 :0624:/      2.9/      2.8/      2.8/      2.8
.E3 :0625:/      2.8/      2.8/      2.8/      2.7
.E4 :0626:/      2.7/      2.7/      2.7/      2.7
.E5 :0627:/      2.7/      2.6/      2.6/      2.6
.E6 :0628:/      2.6
.ER SXXW4      20110623 Z DC201106231445/DH18/QRIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      0.72/      0.70/      0.69
.E2 :0624:/      0.68/      0.67/      0.66/      0.65
.E3 :0625:/      0.65/      0.64/      0.63/      0.62
.E4 :0626:/      0.61/      0.60/      0.59/      0.59
.E5 :0627:/      0.58/      0.57/      0.56/      0.56
.E6 :0628:/      0.55
:
:ARVADA WY - POWDER RIVER      HSA - BYZ
:
:
:LATEST STAGE 3.8 FT AT 1430Z ON 0623
.ER ARVW4      20110623 Z DC201106231445/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      3.7/      3.6/      3.6
.E2 :0624:/      3.5/      3.5/      3.4/      3.4
.E3 :0625:/      3.4/      3.4/      3.4/      3.3
.E4 :0626:/      3.3/      3.3/      3.3/      3.3
.E5 :0627:/      3.3/      3.3/      3.3/      3.2
.E6 :0628:/      3.2
:
:LOCATE MT - POWDER RIVER      HSA - BYZ
:
:
:LATEST STAGE 4.2 FT AT 1400Z ON 0623
.ER LOCM8      20110623 Z DC201106231445/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      4.2/      4.2/      4.2
.E2 :0624:/      4.1/      4.1/      4.1/      4.0
.E3 :0625:/      4.0/      4.0/      4.0/      4.0
.E4 :0626:/      4.0/      4.0/      3.9/      3.9
.E5 :0627:/      3.8/      3.7/      3.6/      3.6
.E6 :0628:/      3.5
:
:GLEN DIVE MT - YELLOWSTONE RIVER      HSA - GGW
:FLOOD STAGE 53.5      FCST ISSUANCE STAGE 51.5
:
:LATEST STAGE 50.8 FT AT 1400Z ON 0623
.AR : CREST : GLNM8 20110628 Z DC201106231445/DH12/HGIFFX 52.7
.ER GLNM8      20110623 Z DC201106231445/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      50.8/      50.8/      50.8

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:...END of MESSAGE...
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[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 9:43 AM
To: Farhat, Jody S NWD02
Cc: Blechinger, Erik T NWO; [REDACTED]
Subject: CONGRESSIONAL: Senator Thune question about reservoir releases (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jody:
David Schwietert (Thune, SD) called me yesterday and followed up with an e-mail message relaying the following questions and dialogue.

QUESTION:

Senator Thune is curious what the modeling would show if the Corps had released additional water from Garrison/Oahe starting at the beginning of this year.

For instance, if both reservoirs had releases at their record flows (65,000 cfs and 59,000 cfs) what would that have done to free up additional space in the flood control zone.

Something tells me that even if these elevated releases occurred between January and May, there would still need to be record releases out of both dams (higher than the previous record flows) to accommodate the high precipitation/runoff.

Above all, I think this would help to show what today's situation would be if such releases were put in place from Jan-May. Something tells me that based on the amount of precipitation/runoff that we've witnessed, it would still have likely required 100+ cfs out of both dams.

Based on the talking points on the MRJIC SharePoint from 8 June, here is my proposed response but would like your thoughts and/or edits before sending it.

DRAFT ANSWER:

We have not analyzed what effect increasing the releases earlier in the year would have had on the ability of the system to store additional flood flows. In addition, at no time during the January to March timeframe did we have weather forecast information indicating that doing so would be necessary in order to avoid record releases. Immediately after this rainfall event we began incrementally stepping up our releases in a controlled manner, while still allowing people downstream to prepare for record releases and a record runoff water year.

Releases from the Missouri River dams last fall and throughout the winter of 2010-11 were above normal. All flood waters from 2010 were released in time for the 2011 runoff season. 2010 was the third highest water year on record in the Missouri River Basin.

On 28 January 2011, the full flood capacity of the Missouri River reservoir system was available for this year's runoff season (reservoir was at desired 56.8 Million Acre Feet). At that point, and all the way through the first of May, we had no reason to think we needed to increase releases beyond normal levels.

The current record high releases we are experiencing has been due to combination of precipitation events: 1) plains snow; 2) extraordinary rainfall in eastern Montana,

Northern Wyoming and the western Dakota in one month (300% of normal in May); and 3) additional mountain snowpack accumulation to record levels in May combined with a delayed melt pattern.

The May 2011 runoff into the Missouri River Basin above Sioux City was 10.5 MAF - compared to a normal May runoff based on historical records is only 3.3 MAF. To put this in some perspective, 10.5 MAF would be enough water to cover the entire state of Iowa in over 3 inches of water. This was the second highest single month of runoff since 1898. The only higher month was in 1952 with 13.2 MAF in April.

I know [REDACTED] had sent a response to a similar question from Senator Johannis back on 10 June. I thought that for this response I'd stick more to the talking points even though I did make a few modifications. Let me know if this meets with your approval or if you have some suggested revisions.

Thanks,
[REDACTED]

Classification: UNCLASSIFIED

Caveats: NONE

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 9:40 AM
To: Farhat, Jody S NWD02
Subject: Missouri River Forecast

ZCZC MKCRVFMOM DEF
TTAA00 KKRF DDHMM
RVFMOM

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1431Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS MISSOURI MAINSTEM

: ==> This forecast includes obsd precip & 24 hours of QPF <==

:
: ==> PLEASE REFER TO THE FOLLOWING WEBSITE FOR <==
: ==> LONGER TERM CREST INFORMATION <==
: ==> <==
: ==> <http://www.nwo.usace.army.mil/html/op-e/flood.html> <==
: ==> <==

:
:
:
: GAVINS PT RES NE - MISSOURI RIVER

:
:
: LATEST ESTIMATED DISCHARGE 155.00 KCFS AT 1200Z ON 0623
: ER GPDN1REL 20110623 Z DC201106231431/DH18/QTIFF/DIH6
: QPF FCST 12Z 18Z 0Z 6Z
: E1 :0623: / 160.00/ 160.00/ 160.00
: E2 :0624:/ 160.00/ 160.00/ 160.00/ 160.00
: E3 :0625:/ 160.00/ 160.00/ 160.00/ 160.00
: E4 :0626:/ 160.00/ 160.00/ 160.00/ 160.00
: E5 :0627:/ 160.00/ 160.00/ 160.00/ 160.00
: E6 :0628:/ 160.00

:
: BAGNELL RES MO - OSAGE RIVER

:
:
: LATEST ESTIMATED DISCHARGE 5.46 KCFS AT 1200Z ON 0623
: ER LKSM7REL 20110623 Z DC201106231431/DH18/QTIFF/DIH6
: QPF FCST 12Z 18Z 0Z 6Z
: E1 :0623: / 6.00/ 6.00/ 6.00
: E2 :0624:/ 3.50/ 3.50/ 3.50/ 3.50
: E3 :0625:/ 3.50/ 3.50/ 3.50/ 3.50
: E4 :0626:/ 3.50/ 3.50/ 3.50/ 3.50
: E5 :0627:/ 12.00/ 12.00/ 12.00/ 12.00
: E6 :0628:/ 12.00

```

:
:SOUTH SIOUX CITY NE - MISSOURI RIVER      HSA - FSD
:FLOOD STAGE 30.0      FCST ISSUANCE STAGE 28.0
:
:LATEST STAGE 34.2 FT AT 1400Z ON 0623
.ER SSCN1      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      34.2/      34.3/      34.3
.E2 :0624:/      34.3/      34.4/      34.4/      34.5
.E3 :0625:/      34.5/      34.6/      34.6/      34.6
.E4 :0626:/      34.6/      34.6/      34.6/      34.7
.E5 :0627:/      34.7/      34.7/      34.6/      34.6
.E6 :0628:/      34.6
.ER SSCN1      20110623 Z DC201106231431/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      173.12/      174.05/      174.36
.E2 :0624:/      174.67/      175.69/      176.72/      177.29
.E3 :0625:/      177.85/      178.42/      178.99/      179.16
.E4 :0626:/      179.33/      179.50/      179.67/      179.84
.E5 :0627:/      180.02/      179.81/      179.60/      179.40
.E6 :0628:/      179.09
:
:DECATUR NE - MISSOURI RIVER      HSA - OAX
:FLOOD STAGE 35.0      FCST ISSUANCE STAGE 33.0
:
:LATEST STAGE 39.0 FT AT 1400Z ON 0623
.ER DCTN1      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      39.0/      39.0/      39.0
.E2 :0624:/      39.1/      39.1/      39.1/      39.1
.E3 :0625:/      39.2/      39.2/      39.3/      39.3
.E4 :0626:/      39.3/      39.3/      39.3/      39.3
.E5 :0627:/      39.3/      39.3/      39.3/      39.3
.E6 :0628:/      39.3
:
:BLAIR NE 2E - MISSOURI RIVER      HSA - OAX
:FLOOD STAGE 26.5      FCST ISSUANCE STAGE 25.5
:
:LATEST STAGE 32.5 FT AT 1416Z ON 0623
.ER BLAN1      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      32.5/      32.5/      32.5
.E2 :0624:/      32.5/      32.5/      32.5/      32.5
.E3 :0625:/      32.5/      32.5/      32.6/      32.6
.E4 :0626:/      32.6/      32.6/      32.6/      32.6
.E5 :0627:/      32.6/      32.6/      32.6/      32.6
.E6 :0628:/      32.6
:
:OMAHA NE - MISSOURI RIVER      HSA - OAX
:FLOOD STAGE 29.0      FCST ISSUANCE STAGE 27.0
:
:LATEST STAGE 34.7 FT AT 1415Z ON 0623
.ER OMHN1      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      34.7/      34.6/      34.6
.E2 :0624:/      34.6/      34.6/      34.5/      34.5
.E3 :0625:/      34.5/      34.5/      34.4/      34.4

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.E4 :0626:/	34.4/	34.4/	34.4/	34.3
.E5 :0627:/	34.3/	34.3/	34.3/	34.3
.E6 :0628:/	34.3			

.ER OMHN1 20110623 Z DC201106231431/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	200.78/	200.17/	199.29
.E2 :0624:/	198.90/	198.35/	197.78/	197.10
.E3 :0625:/	196.50/	195.92/	195.37/	194.88
.E4 :0626:/	194.44/	194.02/	193.63/	193.26
.E5 :0627:/	192.90/	192.52/	192.12/	191.69
.E6 :0628:/	191.25			

:
:NEBRASKA CITY NE - MISSOURI RIVER HSA - OAX
:FLOOD STAGE 18.0 FCST ISSUANCE STAGE 16.0

:
:LATEST STAGE 27.8 FT AT 1400Z ON 0623

.ER NEBN1 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	27.8/	27.8/	27.8
.E2 :0624:/	27.7/	27.6/	27.6/	27.5
.E3 :0625:/	27.4/	27.4/	27.3/	27.3
.E4 :0626:/	27.3/	27.2/	27.2/	27.1
.E5 :0627:/	27.1/	27.1/	27.1/	27.0
.E6 :0628:/	27.0			

.ER NEBN1 20110623 Z DC201106231431/DH18/QRIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
-----------	-----	-----	----	----

.E1 :0623:	/	215.89/	217.43/	216.82
.E2 :0624:/	213.70/	210.90/	208.97/	207.62
.E3 :0625:/	206.81/	205.75/	204.44/	203.14
.E4 :0626:/	202.01/	200.69/	199.15/	197.86
.E5 :0627:/	197.14/	196.71/	196.28/	195.98
.E6 :0628:/	195.89			

:
:BROWNVILLE NE - MISSOURI RIVER HSA - OAX
:FLOOD STAGE 33.0 FCST ISSUANCE STAGE 31.0

:
:LATEST STAGE 44.7 FT AT 1415Z ON 0623

.ER BRON1 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
-----------	-----	-----	----	----

.E1 :0623:	/	44.7/	44.7/	44.7
.E2 :0624:/	44.7/	44.7/	44.6/	44.6
.E3 :0625:/	44.6/	44.5/	44.5/	44.4
.E4 :0626:/	44.4/	44.3/	44.2/	44.2
.E5 :0627:/	44.2/	44.1/	44.1/	44.1
.E6 :0628:/	44.1			

:
:RULO NE - MISSOURI RIVER HSA - OAX
:FLOOD STAGE 17.0 FCST ISSUANCE STAGE 15.0

:
:LATEST STAGE 26.9 FT AT 1330Z ON 0623

.ER RULN1 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
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.E1 :0623:	/	26.9/	26.9/	26.9
.E2 :0624:/	26.9/	26.9/	26.9/	26.8
.E3 :0625:/	26.8/	26.8/	26.8/	26.7
.E4 :0626:/	26.7/	26.7/	26.7/	26.7
.E5 :0627:/	26.7/	26.6/	26.6/	26.6

.E6 :0628:/ 26.6
 .ER RULN1 20110623 Z DC201106231431/DH18/QRIF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623:/ / 223.15/ 221.63/ 220.77
 .E2 :0624:/ 220.90/ 220.88/ 219.51/ 217.63
 .E3 :0625:/ 215.07/ 212.42/ 210.25/ 208.46
 .E4 :0626:/ 206.70/ 204.91/ 203.15/ 201.38
 .E5 :0627:/ 199.52/ 197.65/ 196.01/ 194.71
 .E6 :0628:/ 193.65

:
 :ST JOSEPH MO - MISSOURI RIVER HSA - EAX
 :FLOOD STAGE 17.0 FCST ISSUANCE STAGE 13.5

:
 :LATEST STAGE 26.2 FT AT 1330Z ON 0623
 .ER SJSM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623:/ / 26.5/ 26.8/ 27.1
 .E2 :0624:/ 27.2/ 27.2/ 27.2/ 27.2
 .E3 :0625:/ 27.2/ 27.2/ 27.1/ 27.1
 .E4 :0626:/ 27.0/ 26.9/ 26.8/ 26.8
 .E5 :0627:/ 26.7/ 26.6/ 26.5/ 26.5
 .E6 :0628:/ 26.4

.ER SJSM7 20110623 Z DC201106231431/DH18/QRIF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623:/ / 200.20/ 206.76/ 212.16
 .E2 :0624:/ 214.09/ 214.28/ 214.48/ 213.99
 .E3 :0625:/ 213.51/ 213.03/ 212.55/ 211.18
 .E4 :0626:/ 209.82/ 208.46/ 207.09/ 205.73
 .E5 :0627:/ 204.37/ 203.01/ 201.64/ 200.28
 .E6 :0628:/ 198.92

:
 :ATCHISON KS NO.1 - MISSOURI RIVER HSA - EAX
 :FLOOD STAGE 22.0 FCST ISSUANCE STAGE 20.0

:
 :LATEST STAGE 29.3 FT AT 1159Z ON 0623
 .ER ATCK1 20110623 Z DC201106231431/DH18/HGIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623:/ / 29.5/ 29.7/ 29.9
 .E2 :0624:/ 30.0/ 30.2/ 30.2/ 30.2
 .E3 :0625:/ 30.2/ 30.2/ 30.2/ 30.1
 .E4 :0626:/ 30.1/ 30.1/ 30.0/ 30.0
 .E5 :0627:/ 29.9/ 29.8/ 29.8/ 29.7
 .E6 :0628:/ 29.6

:
 :LEAVENWORTH KS - MISSOURI RIVER HSA - EAX
 :FLOOD STAGE 20.0 FCST ISSUANCE STAGE 18.0

:
 :LATEST ESTIMATED STAGE 25.0 FT AT 1200Z ON 0623 .AR LEVK1 20110623 DH1200/HGIPX 25.00E
 .ER LEVK1 20110623 Z DC201106231431/DH18/HGIFF/DIH6
 :QPF FCST 12Z 18Z 0Z 6Z
 .E1 :0623:/ / 25.3/ 25.6/ 25.9
 .E2 :0624:/ 26.1/ 26.4/ 26.6/ 26.8
 .E3 :0625:/ 26.9/ 26.9/ 26.9/ 26.9
 .E4 :0626:/ 26.9/ 26.8/ 26.7/ 26.6
 .E5 :0627:/ 26.5/ 26.4/ 26.3/ 26.2
 .E6 :0628:/ 26.1

:KANSAS CITY MO - MISSOURI RIVER HSA - EAX

:FLOOD STAGE 32.0 FCST ISSUANCE STAGE 30.0

:

:LATEST STAGE 27.2 FT AT 1330Z ON 0623

.ER KCDM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 27.5/ 27.8/ 28.1

.E2 :0624:/ 28.4/ 28.6/ 28.9/ 29.1

.E3 :0625:/ 29.4/ 29.6/ 29.7/ 29.8

.E4 :0626:/ 29.8/ 29.8/ 29.8/ 29.7

.E5 :0627:/ 29.6/ 29.6/ 29.5/ 29.4

.E6 :0628:/ 29.3/ 29.2/ 29.1/ 28.9

.E7 :0629:/ 28.7/ 28.6/ 28.4/ 28.3

.E8 :0630:/ 28.2

.ER KCDM7 20110623 Z DC201106231431/DH18/QRIF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 184.83/ 188.17/ 191.58

.E2 :0624:/ 194.97/ 197.50/ 200.31/ 203.54

.E3 :0625:/ 206.76/ 209.22/ 210.70/ 211.31

.E4 :0626:/ 211.40/ 211.23/ 210.90/ 210.37

.E5 :0627:/ 209.63/ 208.74/ 207.74/ 206.71

.E6 :0628:/ 205.66/ 204.27/ 202.83/ 201.12

.E7 :0629:/ 198.74/ 196.70/ 195.03/ 193.60

.E8 :0630:/ 192.50

:SIBLEY MO - MISSOURI RIVER HSA - EAX

:FLOOD STAGE 22.0 FCST ISSUANCE STAGE 20.0

:

:LATEST STAGE 25.5 FT AT 1041Z ON 0623

.ER SBEM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 25.7/ 25.9/ 26.2

.E2 :0624:/ 26.4/ 26.7/ 26.9/ 27.1

.E3 :0625:/ 27.4/ 27.6/ 27.7/ 27.8

.E4 :0626:/ 27.8/ 27.8/ 27.8/ 27.8

.E5 :0627:/ 27.8/ 27.7/ 27.6/ 27.6

.E6 :0628:/ 27.5

:

:NAPOLEON MO - MISSOURI RIVER HSA - EAX

:FLOOD STAGE 17.0 FCST ISSUANCE STAGE 15.0

:

:LATEST STAGE 22.5 FT AT 1330Z ON 0623

.ER NAPM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 22.8/ 23.1/ 23.4

.E2 :0624:/ 23.7/ 23.9/ 24.1/ 24.4

.E3 :0625:/ 24.6/ 24.8/ 25.0/ 25.1

.E4 :0626:/ 25.1/ 25.1/ 25.1/ 25.1

.E5 :0627:/ 25.0/ 25.0/ 24.9/ 24.9

.E6 :0628:/ 24.8

:

:WAVERLY MO - MISSOURI RIVER HSA - EAX

:FLOOD STAGE 20.0 FCST ISSUANCE STAGE 18.0

:

:LATEST STAGE 25.1 FT AT 1330Z ON 0623

.ER WVYM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623: / 25.3/ 25.5/ 25.8

```

.E2 :0624:/      26.0/      26.3/      26.5/      26.7
.E3 :0625:/      26.9/      27.1/      27.3/      27.5
.E4 :0626:/      27.6/      27.7/      27.7/      27.7
.E5 :0627:/      27.7/      27.6/      27.6/      27.5
.E6 :0628:/      27.5/      27.4/      27.3/      27.3
.E7 :0629:/      27.2/      27.0/      26.9/      26.8
.E8 :0630:/      26.7
.ER WVYM7      20110623 Z DC201106231431/DH18/QRIF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      175.90/      178.78/      182.11
.E2 :0624:/      185.65/      189.16/      192.47/      195.60
.E3 :0625:/      198.73/      201.90/      204.93/      207.45
.E4 :0626:/      209.21/      210.22/      210.63/      210.64
.E5 :0627:/      210.38/      209.90/      209.24/      208.43
.E6 :0628:/      207.51/      206.50/      205.37/      204.09
.E7 :0629:/      202.61/      200.86/      198.93/      197.02
.E8 :0630:/      195.29
:
:MIAMI MO - MISSOURI RIVER      HSA - EAX
:FLOOD STAGE 18.0      FCST ISSUANCE STAGE 16.0
:
:LATEST STAGE 23.4 FT AT 1149Z ON 0623
.ER MIAM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      23.4/      23.6/      23.9
.E2 :0624:/      24.2/      24.4/      24.6/      24.9
.E3 :0625:/      25.1/      25.3/      25.4/      25.6
.E4 :0626:/      25.8/      25.9/      26.0/      26.1
.E5 :0627:/      26.1/      26.1/      26.1/      26.0
.E6 :0628:/      26.0
:
:GLASGOW MO - MISSOURI RIVER      HSA - EAX
:FLOOD STAGE 25.0      FCST ISSUANCE STAGE 23.0
:
:LATEST STAGE 26.3 FT AT 1330Z ON 0623
.ER GLZM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      26.4/      26.5/      26.6
.E2 :0624:/      26.7/      26.8/      26.9/      27.1
.E3 :0625:/      27.3/      27.5/      27.6/      27.8
.E4 :0626:/      28.0/      28.1/      28.3/      28.4
.E5 :0627:/      28.5/      28.5/      28.5/      28.5
.E6 :0628:/      28.5
:
:BOONVILLE MO - MISSOURI RIVER      HSA - EAX
:FLOOD STAGE 21.0      FCST ISSUANCE STAGE 19.0
:
:LATEST STAGE 22.3 FT AT 1300Z ON 0623
.ER BOZM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:/      /      22.2/      22.2/      22.3
.E2 :0624:/      22.4/      22.5/      22.5/      22.6
.E3 :0625:/      22.8/      23.0/      23.1/      23.3
.E4 :0626:/      23.4/      23.6/      23.7/      23.8
.E5 :0627:/      24.0/      24.1/      24.1/      24.1
.E6 :0628:/      24.1
.ER BOZM7      20110623 Z DC201106231431/DH18/QRIF/DIH6

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:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      182.62/    184.28/    185.96
.E2 :0624:/    187.30/    188.39/    189.60/    191.38
.E3 :0625:/    193.68/    196.29/    199.01/    201.35
.E4 :0626:/    203.92/    206.38/    208.81/    211.24
.E5 :0627:/    213.41/    215.04/    216.00/    216.39
.E6 :0628:/    216.34
:
:JEFFERSON CITY MO - MISSOURI RIVER      HSA - LSX
:FLOOD STAGE 23.0      FCST ISSUANCE STAGE 21.0
:
:LATEST STAGE 21.8 FT AT 1400Z ON 0623
.ER JFFM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      21.8/      21.8/      21.9
.E2 :0624:/    22.0/      22.2/      22.3/      22.4
.E3 :0625:/    22.5/      22.6/      22.7/      22.9
.E4 :0626:/    23.1/      23.3/      23.5/      23.6
.E5 :0627:/    23.8/      23.9/      24.1/      24.2
.E6 :0628:/    24.2
:
:CHAMMOIS MO - MISSOURI RIVER      HSA - LSX
:FLOOD STAGE 17.0      FCST ISSUANCE STAGE 15.0
:
:LATEST STAGE 17.2 FT AT 1200Z ON 0623
.ER CMSM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      16.9/      17.1/      17.0
.E2 :0624:/    16.7/      16.4/      16.5/      16.6
.E3 :0625:/    16.7/      16.8/      16.9/      17.0
.E4 :0626:/    17.2/      17.4/      17.7/      17.9
.E5 :0627:/    18.1/      18.3/      18.5/      18.7
.E6 :0628:/    19.0
:
:GASCONADE MO - MISSOURI RIVER      HSA - LSX
:FLOOD STAGE 22.0      FCST ISSUANCE STAGE 20.0
:
:LATEST STAGE 23.3 FT AT 1100Z ON 0623
.ER GSCM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      23.2/      23.2/      23.2
.E2 :0624:/    23.0/      22.9/      22.9/      23.0
.E3 :0625:/    23.0/      23.0/      23.1/      23.2
.E4 :0626:/    23.4/      23.6/      23.8/      24.0
.E5 :0627:/    24.1/      24.3/      24.5/      24.7
.E6 :0628:/    25.0
:
:HERMANN MO - MISSOURI RIVER      HSA - LSX
:FLOOD STAGE 21.0      FCST ISSUANCE STAGE 19.0
:
:LATEST STAGE 21.1 FT AT 1330Z ON 0623
.ER HRNM7      20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST      12Z      18Z      0Z      6Z
.E1 :0623:      /      21.1/      21.1/      21.0
.E2 :0624:/    20.8/      20.6/      20.6/      20.6
.E3 :0625:/    20.6/      20.7/      20.7/      20.9
.E4 :0626:/    21.0/      21.2/      21.4/      21.5

```

.E5 :0627:/	21.7/	21.9/	22.1/	22.3
.E6 :0628:/	22.5/	22.8/	23.0/	23.2
.E7 :0629:/	23.2/	23.3/	23.3/	23.2
.E8 :0630:/	23.2			

.ER HRNM7 20110623 Z DC201106231431/DH18/QRIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 199.22/ 198.94/ 198.30
.E2 :0624:/ 195.68/ 192.99/ 192.23/ 192.60
.E3 :0625:/ 193.17/ 193.72/ 194.70/ 196.28
.E4 :0626:/ 198.32/ 200.63/ 203.14/ 205.67
.E5 :0627:/ 208.18/ 210.65/ 213.07/ 215.70
.E6 :0628:/ 219.28/ 223.18/ 226.28/ 228.33
.E7 :0629:/ 229.72/ 230.15/ 229.95/ 229.45
.E8 :0630:/ 228.74

:
:WASHINGTON MO - MISSOURI RIVER HSA - LSX
:FLOOD STAGE 20.0 FCST ISSUANCE STAGE 18.0
:

:LATEST STAGE 17.8 FT AT 1345Z ON 0623
.ER WHGM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 17.7/ 17.6/ 17.5
.E2 :0624:/ 17.5/ 17.4/ 17.3/ 17.1
.E3 :0625:/ 17.1/ 17.1/ 17.1/ 17.1
.E4 :0626:/ 17.2/ 17.3/ 17.4/ 17.5
.E5 :0627:/ 17.7/ 17.8/ 18.0/ 18.1
.E6 :0628:/ 18.3

:
:ST CHARLES MO 1E - MISSOURI RIVER HSA - LSX
:FLOOD STAGE 25.0 FCST ISSUANCE STAGE 23.0
:

:LATEST STAGE 24.4 FT AT 1400Z ON 0623
.ER SCLM7 20110623 Z DC201106231431/DH18/HGIFF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623: / 24.3/ 24.2/ 24.0
.E2 :0624:/ 23.9/ 23.8/ 23.8/ 23.7
.E3 :0625:/ 23.6/ 23.5/ 23.4/ 23.4
.E4 :0626:/ 23.4/ 23.5/ 23.5/ 23.6
.E5 :0627:/ 23.7/ 23.9/ 24.0/ 24.2
.E6 :0628:/ 24.3

:*****

:COMMENT

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:wao

:...END of MESSAGE...

[REDACTED]

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 9:35 AM
To: Farhat, Jody S NWD02
Subject: MOTRIBS Flow Forecasts

ZCZC MKCRVFKRF KRF
TTAA00 KKRF 231430
RVFKRF

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO

*** FOR INTERNAL NWS USE ONLY ... NOT FOR PUBLIC RELEASE ***

:CREATED 6/23/2011 1430Z

:

.ER SCOS2 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF

.ER SCOS2 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF

.E1	6.770/	6.748/	6.741/	6.752/	6.784/	6.837/	6.911/	7.010/
.E2	7.134/	7.282/	7.450/	7.634/	7.826/	8.024/	8.224/	8.422/
.E3	8.612/	8.790/	8.950/	9.092/	9.229/	9.344/	9.436/	9.507/
.E4	9.557/	9.587/	9.598/	9.589/				

.ER AKRI4 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF

.ER AKRI4 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF

.E1	12.676/	13.206/	13.780/	14.332/	14.758/	15.024/	15.111/	15.069/
.E2	14.929/	14.682/	14.341/	13.705/	12.754/	11.567/	10.437/	9.533/
.E3	8.842/	8.272/	7.690/	7.205/	6.903/	6.703/	6.550/	6.431/
.E4	6.336/	6.251/	6.173/	6.076/				

.ER TURI4 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF

.ER TURI4 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF

.E1	10.030/	9.696/	9.316/	8.863/	8.825/	8.660/	8.403/	8.117/
.E2	7.844/	7.612/	7.433/	7.303/	7.214/	7.161/	7.144/	7.170/
.E3	7.244/	7.366/	7.522/	7.693/	7.859/	8.013/	8.152/	8.265/
.E4	8.326/	8.306/	8.185/	7.970/				

.ER LOUN1 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF

.ER LOUN1 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF

.E1	24.557/	22.606/	22.430/	22.573/	22.332/	20.974/	20.327/	20.323/
.E2	19.755/	18.023/	16.752/	16.923/	17.179/	16.738/	16.631/	17.361/
.E3	17.866/	17.522/	17.236/	17.610/	17.840/	17.360/	16.806/	16.852/
.E4	16.757/	16.035/	15.433/	15.428/				

.ER HMBI4 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF

.ER HMBI4 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF

.E1	6.996/	6.469/	5.733/	5.085/	4.653/	4.330/	4.072/	3.858/
.E2	3.671/	3.508/	3.366/	3.241/	3.132/	3.035/	2.949/	2.872/
.E3	2.803/	2.742/	2.686/	2.636/	2.590/	2.549/	2.511/	2.476/
.E4	2.444/	2.414/	2.386/	2.360/				

.ER GRMM7 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF

.ER GRMM7 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF

.E1	1.015/	0.909/	0.871/	0.763/	0.639/	0.556/	0.497/	0.453/
.E2	0.421/	0.398/	0.381/	0.368/	0.358/	0.350/	0.344/	0.338/

.E3	0.333/	0.329/	0.325/	0.321/	0.318/	0.315/	0.311/	0.308/
.E4	0.305/	0.302/	0.299/	0.297/				
.ER SSTM7 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER SSTM7 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	1.788/	1.512/	1.266/	1.034/	0.923/	0.788/	0.659/	0.531/
.E2	0.482/	0.450/	0.426/	0.404/	0.385/	0.371/	0.360/	0.351/
.E3	0.344/	0.338/	0.333/	0.328/	0.324/	0.320/	0.317/	0.313/
.E4	0.310/	0.307/	0.305/	0.304/				
.ER DSOK1 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER DSOK1 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	5.840/	5.639/	5.465/	5.333/	5.223/	5.125/	5.027/	4.919/
.E2	4.802/	4.685/	4.582/	4.499/	4.441/	4.404/	4.381/	4.367/
.E3	4.354/	4.340/	4.322/	4.298/	4.270/	4.239/	4.207/	4.176/
.E4	4.145/	4.113/	4.081/	4.048/				
.ER SNZM7 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER SNZM7 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	4.747/	4.269/	4.003/	3.810/	3.663/	3.536/	3.456/	3.265/
.E2	3.081/	2.884/	2.718/	2.561/	2.439/	2.336/	2.241/	2.153/
.E3	2.069/	1.990/	1.913/	1.853/	1.796/	1.751/	1.713/	1.680/
.E4	1.651/	1.625/	1.601/	1.579/				
.ER PRIM7 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER PRIM7 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	3.154/	2.770/	2.476/	2.203/	1.946/	1.757/	1.686/	1.715/
.E2	1.800/	1.881/	1.965/	2.006/	2.013/	2.001/	1.967/	1.920/
.E3	1.873/	1.825/	1.774/	1.728/	1.690/	1.658/	1.623/	1.590/
.E4	1.565/	1.543/	1.517/	1.491/				
.ER STTM7 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER STTM7 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	10.515/	6.660/	6.183/	6.204/	6.162/	6.127/	6.099/	6.076/
.E2	6.057/	6.041/	6.028/	6.018/	6.009/	6.002/	5.995/	5.990/
.E3	5.985/	5.981/	5.977/	5.974/	5.971/	5.968/	5.966/	5.963/
.E4	5.961/	5.959/	5.957/	5.955/				
.ER RIFM7 0623 Z DH18/DC201106231430/DUE/QRIPZZZ/DIH06: OBS SHEF								
.ER RIFM7 0623 Z DH18/DC201106231430/DUE/QRIFWZZ/DIH06: FCST SHEF								
.E1	2.626/	2.562/	2.534/	2.472/	2.425/	2.360/	2.294/	2.220/
.E2	2.145/	2.082/	2.029/	1.985/	1.947/	1.915/	1.888/	1.864/
.E3	1.844/	1.825/	1.809/	1.793/	1.779/	1.765/	1.752/	1.739/
.E4	1.727/	1.715/	1.704/	1.693/				

:
:END OF MESSAGE

NNNN

[REDACTED]

From:

Sent:

To:

[REDACTED]
Thursday, June 23, 2011 9:33 AM

DLL-CENWO-OD-GA; [REDACTED]

[REDACTED] Farhat, Jody S NWD02; [REDACTED]

Subject:

[REDACTED]
Today's Staff Notes (UNCLASSIFIED)

Attachments:

6-23 Garrison Flood Fight Daily Staff Notes.docx; Main Stem Regulation Forecast - Three-Week (6-22).mht; Phone Book.xlsx

Classification: UNCLASSIFIED

Caveats: FOUO

Attached are today's notes, the current 3-week forecast and emergency contact numbers...

[REDACTED]
Operations Project Manager
Garrison Project

Classification: UNCLASSIFIED

Caveats: FOUO

**Garrison Flood Fight
Daily Staff Notes
Thursday, 23 June 2011**

Forecast/Flows/River Monitoring:

- Lake Sakakawea:
 - Current Reservoir Elevation: 1854.49. Yesterday's elevation: 1854.49
 - Current Tail water Elevation 1684.54. Yesterday's elevation 1684.59
 - Stilling Basin (a.k.a. Spillway Pond) elevation: 1686.4 (too foggy to read...)
 - Estimated Inflows today: 169,000 cfs. Inflows yesterday: 188,800 cfs.
 - Releases: 150,000 cfs.
 - Spillway gates 1 through 28 are open 2 feet.
 - Day water release distribution: Power Plant - 31,000 cfs, Regulating Tunnels - 58,000 cfs, Spillway - 61,000 cfs.
 - Night water release distribution: Power Plant - 16,000 cfs, Regulating Tunnels - 73,000 cfs, Spillway - 61,000 cfs.
 - We are shifting our releases between the regulatory tunnels and the power plant to provide load control for WAPA. Scheduled load and water release changes are being made at 0800 and 2000 hours.
- Fort Peck releases at 60,000 cfs today.
- Missouri River Elevations:
 - Bismarck gage: Currently 18.87 feet. Yesterdays gage was 18.99 feet. Protection measures in Bismarck are to 21.6 feet with a forecasted crest of 20.6 feet.
 - Williston gage: The river gage as of yesterday afternoon was 30.32 feet. Gage was 30.61 yesterday morning. Previous record stage: 28.0 feet.
- Current Snowpack: Snow pack data not updated for today...
 - Ft Peck - crested at 141% of normal peak; currently 55% of the normal peak remains.
 - Garrison - crested at 136% of peak; currently 59% of the normal peak remains.

Garrison Dam Surveillance:

- Surveillance: Team Leader, Ben Letak; cell: (402) 350-2662. Instrumentation: Team Leader Beth Utecht; cell: (701) 400-6451
- Spillway: Ben noted some irregular flow patterns at Gate # 28. This has been noted by others as well and has been checked into. No debris or other issues were discovered. We may be seeing a different flow on this gate do to the sediment upstream in this area?
- Embankment: A thorough walking inspection of the upper two berms/slopes of the downstream slope was conducted yesterday afternoon from the east abutment to the west abutment by six inspectors. Some surface water is still present on the berms, but appears to be drying up. Numerous badger holes (50-60) were noted during the inspection, mostly on the mid-slope. Vegetation is getting very tall on the embankment.

- East Abutment: Nothing new reported.
- Tailrace: Repairs to tailrace rip rap appear to be holding well. The lower end of riprap on east bank continues to erode. Still too wet to get in to make repairs.
- Surveillance Plans: Requirement for 24 hour surveillance is a rapidly moving target. Current forecast shows us hitting the previous record peak elevation for two days this weekend, and then dropping the pool before again hitting the record pool for one day. Still evaluating when to activate a night surveillance crew?
- Surcharge of Reservoir: Current forecast shows a surcharge of less than half a foot.

Snake Creek Embankment/ Lake Audubon:

- Surveillance: Nothing to report.
- Lake Audubon has been filled to elevation 1849.5 to utilize additional storage. Currently we do not plan to increase that elevation.

Williston Levee:

- POC's Shannon Jeffers, cell: (701) 220-2812/Jeff Keller (701) 770-8059.
- The team reported a few more pin boils yesterday. The main boil area remained about the same. Some sloughing is being noted along the relief channel. Levee toe road remains very wet.
- John Remus and I participate in a conference call with the City of Williston this morning. I will provide them a daily update/report and John committed to running some "what if" models for the city to help determine what scenarios would have to occur for the levee to overtop?

Natural Resources:

- POC's Linda Phelps, cell: (701) 220-3411, Garth Zimbelman (701) 400-0894.
- East Diagonal gate is manned/open from 0600-1830 weekdays and is only staffed from 0600-0700 on weekends. Contractors working after these hours will need to contact Natural Resources to have them open the gate.
- Still trying to work with Bis-Man Security to establish a contract for parking and traffic control on weekends.

Outside Maintenance:

- The large picnic shelter was removed from the collapsing bank at the spillway pond yesterday. Currently, it appears as though we'll have to remove additional assets from this area if the erosion continues, as expected.
- Going badger hunting today.
- Also need to mobilize to install the dock at Deepwater Recreation area located up on the lake.
- Still working to stabilize roadways and install signage at the spillway overlook area, in anticipation of continued high visitation.
- Temporary water line: If a leak is noted, notify your supervisor, Chuck Phelps, or I ASAP. Also notify City of Riverdale, "Clay" at (701) 471-6433 or Charles Sorensen ext. 232, or home (701) 654-7614. Shutoff valves located on the line. A drawing showing the locations of these valves is posted in the Outside

Maintenance shop. A valve key to close the valves is located immediately inside the front door of the maintenance building.

Power Plant:

- Start up of Unit 5 has run into some snags. Unit tripped off line. The contractor has sent a message to Black Hills Area Office, stating the unit is the governments. I'm having a hard time understanding this and will visit with Mr. Mailander. This is extremely frustrating and not really something I need to deal with at this time...
- Going back to four units generating today and backing off again this evening to meet WAPA load demands. Changes will be made at 8:00 am and 8:00 pm. Load changes are scheduled to be made through the weekend to assist WAPA with anticipated load demands.

Weather/Safety:

Today: Plentiful sunshine. High 76F. Winds light and variable. Chance of precipitation, ZERO%!	Tonight: Mainly clear. Low around 55F. Winds SE at 5 to 10 mph. Chance of precipitation 20%.	Tomorrow: Showers early then scattered thunderstorms developing later in the day. High 71F. Winds SE at 10 to 20 mph. Chance of rain 40%.
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Needed Resources:

- One overview map requested from the District was delivered yesterday. Remaining maps to be shipped as they are completed.
- Currently working with ACE-IT and looking into upgrading our radios so that we can utilize them effectively for local communication. Cell phone coverage is spotty in several locations. Signal booster has been ordered to improve cell phone reception.
- Kim has the contract specifications for crane services necessary to place stop logs for the inspection of the regulatory tunnels. Inspection was being scheduled for the week of July 11th based on the need to surcharge, however that has also changed. Dave Sobczyk to coordinate Omaha inspection team members needed, as well as which repair product needs to be ordered.

Any resource needs, safety issues, or emergencies should be directed to your team leaders/POC immediately. If they cannot be reached contact Todd Lindquist (cell: 701-220-2359 / Home: 701-487-3411).

OPM Notes:

- I will visit with Water Management Division about potentially reducing releases while we perform an inspection of out regulating tunnels. This would alleviate the need to increase spillway flows to 120,000 cfs, which would greatly exacerbate our erosion.
- Surveillance crew brought up concerns with the heavy vegetation on the embankment. We have awarded a haying contract for the lower portion of the embankment. The awardee plans to harvest the hay in late June or early July.

Currently, I would not want him on the embankment as it is still too wet. Additionally, our outside maintenance crew will mow the berms as soon as conditions permit this to occur without rutting up the area.

- 24 hour surveillance still up in the air as the forecast continues to evolve. The current forecast shows us matching our previous high elevation of 1854.8 for two days, and then receding. We'll continue to monitor the forecast and make plans to go to 24 hour surveillance if needed
- All personnel doing surveillance on the dam should be wearing safety vests. All personnel working traffic control are also required to wear safety vests.
- USGS did not survey the spillway channel, or river flow below the confluence yesterday, because they've been pulled off to perform surveys on the Mouse/Souris. They will coordinate with me when the plan to return and complete the surveys below Garrison.

This regulation forecast was made using computed reservoir inflows based on 5-days of forecast precipitation and mountain snowmelt runoff. The regulation forecast is subject to change daily as actual events occur.

* Indicates release changes from previous forecast

		REGULATION FORECAST 06/22/11												FTRA			
		FTPK				GARR				OAHE				BEND			
		24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE	24EL	24ID	24OD	24GE
22	W	2251.7	46.0	60.0	5.12	1854.5	191.4	150.0	9.30	1619.3	185.5	150.0	13.94	1420.9	164.0	165.0	7.85
23	T	2251.6	45.0	60.0	5.12	1854.7	176.6	150.0	9.31	1619.4	173.7	150.0	13.95	1420.8	160.0	165.0	7.66
24	F	2251.4	45.0	60.0	5.12	1854.8	163.1	150.0	9.31	1619.5	170.0	155.0	13.96	1420.7	162.0	165.0	7.52
25	T	2251.3	45.0	60.0	5.11	1854.8	152.3	150.0	9.31	1619.6	166.0	160.0	13.96	1420.7	166.0	165.0	7.44
26	T	2251.2	44.0	60.0	5.11	1854.7	147.0	150.0	9.31	1619.6	164.0	160.0	13.96	1420.7	164.0	165.0	7.39
27	M	2251.1	44.0	60.0	5.11	1854.7	145.0	150.0	9.31	1619.6	166.0	160.0	13.96	1420.6	163.0	165.0	7.34
28	T	2250.9	43.0	60.0	5.11	1854.7	146.0	150.0	9.31	1619.7	171.0	160.0	13.97	1420.5	162.0	165.0	7.30
29	W	2250.8	43.0	60.0	5.10	1854.7	148.0	150.0	9.31	1619.7	176.0	160.0	13.97	1420.5	161.0	160.0	7.29
30	T	2250.6	43.0	60.0	5.10	1854.7	146.0	150.0	9.31	1619.8	174.0	160.0	13.98	1420.5	160.5	160.0	7.28
1	F	2250.5	43.0	60.0	5.10	1854.7	158.0	150.0	9.31	1619.8	170.0	160.0	13.98	1420.5	160.0	160.0	7.27
2	T	2250.3	40.0	60.0	5.09	1854.7	159.0	150.0	9.31	1619.9	165.0	160.0	13.98	1420.5	160.0	160.0	7.25
3	T	2250.2	41.0	60.0	5.09	1854.8	158.0	150.0	9.31	1619.9	161.0	160.0	13.98	1420.5	160.0	160.0	7.24
4	M	2250.0	41.0	55.0	5.08	1854.7	149.0	150.0	9.31	1619.8	158.0	160.0	13.98	1420.5	160.0	160.0	7.23
5	T	2249.9	41.0	55.0	5.08	1854.7	139.8	150.0	9.31	1619.8	156.0	160.0	13.98	1420.5	160.0	160.0	7.22
6	W	2249.8	40.0	55.0	5.08	1854.6	128.6	150.0	9.30	1619.8	155.0	160.0	13.98	1420.5	160.0	160.0	7.21
7	T	2249.6	39.0	55.0	5.08	1854.4	119.8	150.0	9.29	1619.7	154.0	160.0	13.97	1420.5	160.0	160.0	7.20
8	F	2249.5	39.0	55.0	5.07	1854.2	117.6	150.0	9.28	1619.7	153.0	160.0	13.97	1420.5	160.0	160.0	7.19
9	T	2249.4	38.0	55.0	5.07	1854.0	116.0	150.0	9.28	1619.6	152.0	160.0	13.97	1420.5	160.0	160.0	7.18
10	T	2249.2	38.0	55.0	5.06	1853.8	115.0	150.0	9.27	1619.6	152.0	160.0	13.96	1420.5	160.0	160.0	7.17
11	M	2249.1	38.0	55.0	5.06	1853.6	114.0	150.0	9.26	1619.5	152.0	160.0	13.96	1420.5	160.0	160.0	7.16
12	T	2248.9	38.0	55.0	5.06	1853.4	113.0	150.0	9.25	1619.5	152.0	160.0	13.96	1420.5	160.0	160.0	7.15
13	W	2248.8	35.0	55.0	5.05	1853.2	112.0	150.0	9.23	1619.4	152.0	160.0	13.95	1420.5	160.0	160.0	7.14
14	T	2248.6	32.0	55.0	5.05	1853.0	111.0	150.0	9.22	1619.4	152.0	160.0	13.95	1420.5	160.0	160.0	7.13
15	F	2248.3	31.0	55.0	5.04	1852.8	110.0	150.0	9.21	1619.3	152.0	160.0	13.94	1420.5	160.0	160.0	7.12
16	T	2248.1	29.0	55.0	5.04	1852.6	109.0	150.0	9.20	1619.3	152.0	160.0	13.94	1420.5	160.0	160.0	7.11
17	T	2247.9	27.0	55.0	5.03	1852.3	109.0	150.0	9.19	1619.2	152.0	160.0	13.94	1420.5	160.0	160.0	7.10
18	M	2247.6	25.0	55.0	5.03	1852.1	108.0	150.0	9.18	1619.2	152.0	160.0	13.93	1420.5	160.0	160.0	7.09
19	T	2247.4	22.0	55.0	5.02	1851.9	107.0	150.0	9.17	1619.1	152.0	160.0	13.93	1420.5	160.0	160.0	7.08
20	W	2247.1	20.0	55.0	5.01	1851.6	106.0	150.0	9.15	1619.1	152.0	160.0	13.93	1420.5	160.0	160.0	7.07
21	T	2246.7	18.0	55.0	5.01	1851.4	105.0	150.0	9.14	1619.0	152.0	160.0	13.92	1420.5	160.0	160.0	7.06
22	F	2246.4	18.0	55.0	5.00	1851.1	104.0	150.0	9.13	1619.0	152.0	160.0	13.92	1420.5	160.0	160.0	7.05

Project:

24EL Midnight Elevation (feet above mean sea level)
 24ID Daily Average Inflow (kcfs)
 24OD Daily Average Release (kcfs)
 24GE Daily Power Generation (MWh)

System:

GE Daily Power Generation (MWh)
 SG Midnight Storage (AF)
 DSG Daily Storage Change (AF)

Units:

kcfs thousand cubic feet per second
 MWh megawatt hour
 AF acre-feet

Pagemaster: Water Management; CENWD-PDR;

Internet E-Mail Address: Missouri.Water.Management@nwd02.usace.army.mil

From: [REDACTED]
Sent: Thursday, June 23, 2011 9:15 AM
To: DLL-CENWD-PDR; [REDACTED]
Subject: Thurs Rain Report

>>>>>>> PAGESIZE 60
 >>>>>>> DUMPPP24 * *

0**NOTE** DATA FOR THE PERIOD 06/23/2011-12Z THROUGH 06/23/2011-12Z WILL BE PROCESSED.
 QUANTITY DESC (0.01)
 OBONLY
 END

0PP24 DATA FOR 06/23/11-12Z THRU 06/23/11-12Z

0 - = MISSING VALUE OR SUM E = ESTIMATED VALUE P = PARTIAL SUM

STATION	DESCRIPTION	STATE	06/23	PERIOD SUM
PKRS2	PARKER, WEST FORK	SD	0.65	0.65
MARS2	MARION	SD	0.62E	0.63
SARW4	SARATOGA	WY	0.60E	0.61
SRAW4	SARATOGA, N PLATTE R	WY	0.60	0.61
CLKS2	CLEAR LAKE	SD	0.58	0.58
SFW4	SARATOGA HATCHERY	WY	0.58E	0.58
GRYS2	GARY 4S	SD	0.51E	0.51
DIVM8	DIVIDE	MT	0.50	0.50
ASTS2	ASTORIA 4S	SD	0.49	0.50
HDKM5	HENDRICKS	MN	0.49E	0.50
TVLS2	TUNERVILLE	SD	0.47E	0.47
WPO	PILOT MOUND	MB	0.44	0.44
LBNM5	LAKE BENTON	MN	0.42	0.42
27D	CANBY	MN	0.41E	0.41
MML	MARSHALL AIRPORT	MN	0.41E	0.41
LVRM8	LAKEVIEW RIDGE	MT	0.40	0.41
MDDW4	MIDDLE POWDER	WY	0.40	0.41
LKFM5	LAKEFIELD	MN	0.39	0.39
TYLM5	TYLER	MN	0.39E	0.39
OCHI4	OCHEYEDAN	IA	0.38	0.38
LKVM8	LAKEVIEW	MT	0.37E	0.38
Y68	TRACY	MN	0.37E	0.38
MVDM5	MONTEVIDEO	MN	0.35E	0.35
RWF	REDWOOD FALLS	MN	0.35	0.35
WHTS2	WHITE	SD	0.35E	0.35
WBWS2	WATERTOWN (BROADWAY)	SD	0.34	0.34
HRSI4	HARRIS	IA	0.32E	0.32
WATS2	WATERTOWN	SD	0.32E	0.32
WRTS2	WATERTOWN 1W	SD	0.32E	0.32
DMLW4	DOVE LAKE	WY	0.30	0.31
GRCW4	GRANITE CREEK	WY	0.30	0.31
HGSC2	HAGERMAN TUNNEL	CO	0.30E	0.31
LMHM8	LEMHI RIDGE	MT	0.30	0.31
NSSC2	NAST LAKE	CO	0.30	0.31
NFLW4	NEW FORK LAKE	WY	0.30	0.31
PRKS2	PARKER, WEST FORK	SD	0.30E	0.31
RRDM8	RED ROCK RAWS	MT	0.30E	0.31
SEKS2	ELKTON	SD	0.29E	0.29

JCKM5	JACKSON	MN	0.29E	0.29
CID	CEDAR RAPIDS AIRPORT	IA	0.28	0.28
WTTS2	WATERTOWN (AMRAD)	SD	0.28E	0.28
CYKW4	BIG HORN, CONEY CR	WY	0.27E	0.28
CRBI1	CRAB CREEK	ID	0.27E	0.28
LSKM5	CURRIE	MN	0.27E	0.28
LKWM5	LAKE WILSON	MN	0.26E	0.26
SHRM5	SHERBURN 3WSW	MN	0.26E	0.26
BSWS2	WATERTOWN, BIG SIOUX	SD	0.26E	0.26
HERM5	HERON LAKE	MN	0.25	0.25

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STATION	DESCRIPTION	STATE	06/23	PERIOD SUM
PTRI4	PETERSON, LTL SIOUX R	IA	0.25	0.25
FRES2	FREEMAN	SD	0.24E	0.24
DVL	DEVILS LAKE AIRPORT	ND	0.23	0.23
HARI4	HARTLEY	IA	0.23E	0.23
HURS2	HURON, JAMES R	SD	0.23	0.23
KZBS2	KRANZBURG	SD	0.23E	0.23
LMAM8	LIMA	MT	0.23E	0.23
MYCI4	MAY CITY	IA	0.23E	0.23
MAYI4	MAY CITY	IA	0.23E	0.23
ATY	WATERTOWN AIRPORT	SD	0.23	0.23
BJI	BEMIDJI AIRPORT	MN	0.22E	0.22
BROS2	BROOKINGS 2NE	SD	0.22	0.22
FAR	FARGO	ND	0.22	0.22
RDR	GRAND FORKS AFB	ND	0.22	0.22
LTTW4	LITTLE WARM SPRINGS	WY	0.22E	0.22
MSP	MINNEAPOLIS	MN	0.22	0.22
SXRI4	SIOUX RAPIDS 4E	IA	0.22E	0.22
SIWS2	SISSETON 4W	SD	0.22	0.22
BRGS2	BRIDGEWATER	SD	0.21E	0.21
BKX	BROOKINGS	SD	0.21E	0.21
BRCS2	BRUCE, BIG SIOUX R	SD	0.21	0.21
ESTS2	ESTELLINE	SD	0.21E	0.21
GILI4	GILLETTE GROVE	IA	0.21E	0.21
GFK	GRAND FORKS	ND	0.21	0.21
HTYI4	HARTLEY	IA	0.21E	0.21
CEFM8	LIMA 36ENE	MT	0.21E	0.21
LNNI4	LINN GROVE	IA	0.21E	0.21
SPW	SPENCER	IA	0.21	0.21
TSTM8	TOSTON 5NW AGRIMET	MT	0.21	0.21
TOSM8	TOSTON, MISSOURI R	MT	0.21E	0.21
BTNW4	BEAR TRAP MEADOW	WY	0.20	0.20
BRRM8	BRENNER RAWS	MT	0.20E	0.20
COSW4	COLD SPRINGS	WY	0.20	0.20
DALM8	DALY CREEK	MT	0.20	0.20
DIKI4	DICKENS	IA	0.20E	0.20
DBSI1	DUBOIS EXP STATION	ID	0.20E	0.20
EST	ESTHERVILLE	IA	0.20	0.20
ESTI4	ESTHERVILLE 2N	IA	0.20	0.20
GRSW4	GRASSY LAKE	WY	0.20	0.20
GRLW4	GRASSY LAKE DAM	WY	0.20E	0.20
HRHS2	HURON (AMRAD)	SD	0.20E	0.20

JTWN8	JAMESTOWN HOSPITAL	ND	0.20	0.20
JMSN8	JAMESTOWN, JAMES R	ND	0.20E	0.20
LCKM8	LICK CREEK	MT	0.20	0.20
LTWW4	LITTLE WARM SPGS SCS	WY	0.20	0.20
MRQW4	MARQUETTE CREEK	WY	0.20	0.20
MFRI4	MILFORD 4NW	IA	0.20E	0.20
MQM	MONIDA	MT	0.20E	0.20
NFJM8	NORTH FORK JOCKO	MT	0.20	0.20
NORM8	NORTHEAST ENTRANCE	MT	0.20	0.20
SIBI4	SIBLEY 3NE	IA	0.20	0.20
SPWI4	SPENCER, LTL SIOUX R	IA	0.20E	0.20
SPOI4	SPENCER, OCHEYEDAN R	IA	0.20	0.20

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SUCW4	SUCKER CREEK	WY	0.20	0.20
WSKM8	WHISKEY CREEK	MT	0.20	0.20
BLUM8	BLUFF CREEK RAWLS	MT	0.19	0.19
EMMI4	EMMETSBURG	IA	0.19	0.19
HVNN8	HAVANA	ND	0.19	0.19
HORS2	HURON	SD	0.19E	0.19
KAMS2	LAKE KAMPESKA	SD	0.19E	0.19
MIFI4	MILFORD, LTL SIOUX R	IA	0.19E	0.19
PIPM5	PIPESTONE	MN	0.19	0.19
RAUS2	RAUVILLE 2N, MUD CR	SD	0.19	0.19
RHVI4	RUTHVIN	IA	0.19E	0.19
SBLI4	SIBLEY	IA	0.19E	0.19
VOLS2	VOLGA	SD	0.19E	0.19
WBSS2	WATERTOWN, BIG SIOUX	SD	0.19	0.19
EVYI4	EVERLY 3WNW	IA	0.18E	0.19
LKPI4	LAKE PARK	IA	0.18E	0.19
LRRM8	LIMA RESERVOIR	MT	0.18E	0.19
ORHM8	OPHEIM 21NW, ROCK CR	MT	0.18E	0.19
PKD	PARK RAPIDS AIRPORT	MN	0.18E	0.19
RYLI4	ROYAL	IA	0.18E	0.19
SKLM8	SKYLARK TRAIL	MT	0.18E	0.19
ANDW4	SOUTH PASS CITY 8WSW	WY	0.18E	0.19
TWBS2	TWIN BROOKS 4W	SD	0.18E	0.19
VEBS2	VEBLEN 5SE	SD	0.18E	0.19
BDE	BAUDETTE AIRPORT	MN	0.17E	0.17
JMS	JAMESTOWN AIRPORT	ND	0.17E	0.17
VVV	ORTONVILLE	MN	0.17E	0.17
RVLS2	RAUVILLE 2S	SD	0.17E	0.17
3SE	SPENCER 1N	IA	0.17E	0.17
VBLS2	VEBLEN 3NW	SD	0.17E	0.17
WRNM5	WORTHINGTON 2NNE	MN	0.17	0.17
AMCS2	ABERDEEN, MOCCASIN C	SD	0.16	0.16
BGRS2	BADGER 2S	SD	0.16E	0.16
PONS2	ESTELLINE 7W	SD	0.16E	0.16
HLKI4	HAVELOCK	IA	0.16E	0.16
HOSI4	HOSPERS	IA	0.16	0.16
KDRS2	KIDDER	SD	0.16E	0.16
RALS2	RAUVILLE 2W	SD	0.16E	0.16
SHDI4	SHELDON	IA	0.16	0.16

SHLI4	SHELDON 1N, FLOYD R	IA	0.16E	0.16
WORM5	WORTHINGTON	MN	0.16E	0.16
LMRM8	ANTELOPE RAWS	MT	0.15	0.16
ARLS2	ARLINGTON 1W	SD	0.15E	0.16
APKI4	ARNOLDS PARK	IA	0.15E	0.16
BADS2	BADGER 4NE	SD	0.15E	0.16
CAVS2	CAVOUR 10S	SD	0.15E	0.16
DNSI4	DENISON	IA	0.15	0.16
DNWW4	DINWOODY	WY	0.15E	0.16
FLAS2	FLANDREAU	SD	0.15E	0.16
OAKN8	OAKES	ND	0.15	0.16
VALN8	VALLEY CITY 3NNW	ND	0.15E	0.16
WESS2	WESTPORT, ELM R	SD	0.15	0.16
ALSM8	ALDER 17S	MT	0.14E	0.14

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ID	DESCRIPTION	STATE	06/23	PERIOD SUM
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AXN	ALEXANDRIA	MN	0.14	0.14
BYRI4	BOYER 4SE	IA	0.14E	0.14
CSAI4	CASTANA EXP FARM	IA	0.14	0.14
IOW	IOWA CITY AIRPORT	IA	0.14	0.14
LRBI4	LARRABEE	IA	0.14E	0.14
LNBM8	LINDBERGH LAKE	MT	0.14E	0.14
MCVN8	MCVILLE	ND	0.14E	0.14
MOOW4	MOOSE	WY	0.14E	0.14
RXE	REXBURG AIRPORT	ID	0.14	0.14
SOSS2	SOUTH SHORE 8W	SD	0.14	0.14
SPRI4	SPIRIT LAKE	IA	0.14E	0.14
TWKN8	TEWAUKON RAWS	ND	0.14E	0.14
WMTS2	WILMOT 1ENE	SD	0.14	0.14
ECKS2	ABERDEEN 2NE	SD	0.13E	0.13
ATAW4	ALTA	WY	0.13E	0.13
BKRW4	BECHLER RANGER STA	WY	0.13E	0.13
DINW4	BURRIS, DINWOODY CR	WY	0.13E	0.13
CSLS2	CASTLEWOOD	SD	0.13E	0.13
CSWS2	CASTLEWOOD, BIG SIOUX	SD	0.13	0.13
CLKM8	CLARK CANYON DAM	MT	0.13E	0.13
RASW4	DUBOIS 22SW	WY	0.13E	0.13
EDNS2	EDEN 6NW	SD	0.13E	0.13
FLOS2	FLORENCE, BIG SIOUX	SD	0.13E	0.13
GDNS2	GARDEN CITY	SD	0.13E	0.13
HLSK1	HILLSDALE 3SW	KS	0.13	0.13
JAC	JACKSON HOLE AIRPORT	WY	0.13E	0.13
RYLS2	LAKE CITY 3SW	SD	0.13E	0.13
MVNS2	MARVIN 9SW	SD	0.13E	0.13
BCKN8	OAKES 6NNE, BEAR CR	ND	0.13E	0.13
ROYS2	ROY LAKE ST PARK	SD	0.13	0.13
SELM8	SEELEY LAKE	MT	0.13E	0.13
SILS2	SISSETON 11SW	SD	0.13E	0.13
SOLI4	SOLDIER	IA	0.13E	0.13
LSSI4	SPENCER, LTL SIOUX R	IA	0.13	0.13
CLDW4	BURRIS 10SW	WY	0.12E	0.13
CINI4	CARROLL	IA	0.12	0.13
CLAS2	CLARK	SD	0.12	0.13

WYSH12	DAYTON 12WNW	WY	0.12	0.13
HYTS2	HAYTI	SD	0.12	0.13
HILK1	HILLSDALE LAKE	KS	0.12E	0.13
LOGI4	LOGAN	IA	0.12	0.13
LGNI4	LOGAN #2, BOYER R	IA	0.12E	0.13
ODEI4	ODEBOLT	IA	0.12E	0.13
BCPS2	PEEVER 4S	SD	0.12	0.13
PGHI4	PRIMGHAR	IA	0.12E	0.13
SACI4	SAC CITY	IA	0.12	0.13
ETH	WHEATON	MN	0.12E	0.13
EVES2	ABERDEEN 2E	SD	0.11E	0.12
SUES2	ABERDEEN 2S	SD	0.11E	0.12
BTM8	BURNT CREEK RAW	MT	0.11E	0.12
CKCM8	COOKE CITY 2W	MT	0.11E	0.12
WBRM8	CORVALLIS 2NE	MT	0.11E	0.12
FOD	FT DODGE	IA	0.11E	0.12

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ID	DESCRIPTION	STATE	06/23 SUM
GPI	GLACIER PARK AIRPORT	MT	0.11 0.12
MPTI4	MAPLETON #2	IA	0.11E 0.12
MAPI4	MAPLETON, MAPLE R	IA	0.11E 0.12
ERVW4	RIVERSIDE	WY	0.11E 0.12
SNBI4	SANBORN	IA	0.11E 0.12
SSTS2	SISSETON (AMRAD)	SD	0.11E 0.12
SLBI4	STORM LAKE 2E	IA	0.11E 0.12
WWKN8	WARWICK	ND	0.11E 0.12
WTRS2	WATERTOWN, BIG SIOUX	SD	0.11 0.12
BDLS2	WAUBAY 3NE	SD	0.11E 0.12
WTRI4	WINTERSET 2NNW	IA	0.11 0.12
ABES2	ABERDEEN 4NW	SD	0.10E 0.11
KGIS2	ABERDEEN 5W	SD	0.10E 0.11
BLDW4	BALD MOUNTAIN	WY	0.10 0.11
BTLI4	BATTLE CREEK 3NE	IA	0.10E 0.11
BGEW4	BIG GOOSE	WY	0.10 0.11
BGSW4	BIG SANDY OPENING	WY	0.10 0.11
BSDW4	BONE SPRINGS DIVIDE	WY	0.10 0.11
BOXM8	BOX CANYON	MT	0.10 0.11
BRKS2	BROOKINGS, BIG SIOUX	SD	0.10 0.11
BRRW4	BURRIS	WY	0.10E 0.11
BRCW4	BURROUGHS CREEK	WY	0.10 0.11
CLVM8	CALVERT CREEK	MT	0.10 0.11
CANW4	CANYON 2SSW	WY	0.10 0.11
CAYW4	CANYON RANGER STA	WY	0.10E 0.11
CKPI4	CHEROKEE	IA	0.10 0.11
CHKI4	CHEROKEE, LTL SIOUX	IA	0.10E 0.11
CMDM8	CLOVER MEADOW	MT	0.10E 0.11
DHLM8	DARKHORSE LAKE	MT	0.10 0.11
EVNW4	EVENING STAR	WY	0.10 0.11
GRVW4	GROS VENTRE SUMMIT	WY	0.10 0.11
HANM8	HAND CREEK	MT	0.10E 0.11
HBBW4	HOBBS PARK	WY	0.10 0.11
HOOM8	HOODOO BASIN	MT	0.10 0.11
INCW4	INDIAN CREEK	WY	0.10 0.11

LTHN8	LITCHVILLE 2NW	ND	0.10E	0.11
LOTC2	LOST DOG	CO	0.10	0.11
LWTM8	LOWER TWIN	MT	0.10	0.11
MNOS2	MENNO	SD	0.10E	0.11
OLWW4	OWL CREEK	WY	0.10	0.11
PAOK1	PAOLA	KS	0.10E	0.11
PHBW4	PHILLIPS BENCH	WY	0.10	0.11
RNHW4	RENO HILL	WY	0.10	0.11
RWC14	ROCKWELL CITY #2	IA	0.10E	0.11
SPSW4	SOUTH PASS	WY	0.10	0.11
SLAW4	ST LAWRENCE	WY	0.10	0.11
SLWW4	ST LAWRENCE RANG STA	WY	0.10E	0.11
SMTS2	SUMMIT	SD	0.10E	0.11
TPEM8	TEPEE CREEK	MT	0.10	0.11
THUW4	THUMB DIVIDE	WY	0.10	0.11
TIBM8	TIZER BASIN	MT	0.10	0.11
TOWC2	TOWER	CO	0.10	0.11
TWNW4	TOWNSEND CREEK	WY	0.10	0.11

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STATION			PERIOD
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TNDW4	TOWNSEND CREEK	WY	0.10E 0.11
TRPW4	TRIPLE PEAKS	WY	0.10 0.11
VGLS2	VIRGIL	SD	0.10E 0.11
BLCW4	WASHAKIE 19NW	WY	0.10E 0.11
WWCS2	WATERTOWN 3NE	SD	0.10 0.11
WNRS2	WAUBAY WILDLIFE REF	SD	0.10E 0.11
WHTM8	WHITE MILL	MT	0.10 0.11
WRVW4	WIND RIVER	WY	0.10E 0.11
YWG	WINNEPEG	MB	0.10 0.11
WBNI4	WOODBINE	IA	0.10E 0.11
ADRM8	ALDER 19S	MT	0.09E 0.10
BNFM8	BRENNER GDDS	MT	0.09E 0.10
BRIS2	BRITTON	SD	0.09E 0.10
BRNS2	BRITTON	SD	0.09E 0.10
0787N8	BUCHANAN 2S	ND	0.09E 0.10
DRBM8	DARBY	MT	0.09E 0.10
FRMN8	FORMAN 5SSE	ND	0.09 0.10
GLVI4	GALVA	IA	0.09E 0.10
HSTI4	HOLSTEIN	IA	0.09 0.10
IRQS2	IROQUOIS	SD	0.09E 0.10
LGSW4	LITTLE GOOSE SNOTEL	WY	0.09E 0.10
MLI	MOLINE	IL	0.09 0.10
PULI4	PAULLINA	IA	0.09E 0.10
PKCW4	POCKET CREEK SNOTEL	WY	0.09E 0.10
REMI4	REMSSEN	IA	0.09E 0.10
RMSI4	REMSSEN #2	IA	0.09 0.10
LVSS2	SALEM 5NE	SD	0.09 0.10
SHCM8	SHORT CREEK	MT	0.09E 0.10
TEPM8	TEPEE POINT RAWES	MT	0.09E 0.10
NLWW4	WASHAKIE, LTL WIND R	WY	0.09E 0.10
KSDS2	ABERDEEN 3SW	SD	0.08E 0.09
BAYM8	BAYLOR	MT	0.08E 0.09
BYDW4	BOYD RIDGE RAWES	WY	0.08E 0.09

CPRS2	CARPENTER 4NNE	SD	0.08E	0.09
CORW4	CORA	WY	0.08E	0.09
DLN	DILLON AIRPORT	MT	0.08	0.09
WYFM4	DUBOIS 10WNW	WY	0.08E	0.09
DBOW4	DUBOIS, WIND R	WY	0.08E	0.09
EGNS2	EGAN	SD	0.08E	0.09
ENPW4	ENCAMPMENT	WY	0.08E	0.09
ENCW4	ENCAMPMENT 10ESE	WY	0.08E	0.09
FOSI4	FOSTORIA	IA	0.08E	0.09
GRGI4	GEORGE	IA	0.08E	0.09
HWSR2	HOWARD 8SE	SD	0.08E	0.09
IDGI4	IDA GROVE 5NW	IA	0.08E	0.09
IRES2	IRENE	SD	0.08E	0.09
MBRM8	MAIN BOULDER RAWS	MT	0.08E	0.09
PVRS2	PEEVER 8NNE	SD	0.08E	0.09
RKRI4	ROCK RAPIDS	IA	0.08E	0.09
TOWM8	TOWNSEND	MT	0.08E	0.09
UNDI4	UNDERWOOD	IA	0.08	0.09
VERN8	VERONA	ND	0.08E	0.09
VTT52	VICTOR	SD	0.08E	0.09

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ID	DESCRIPTION	STATE	06/23	PERIOD SUM
WGLM8	WEST GLACIER 1N	MT	0.08E	0.09
BEKS2	WINFRED 2S	SD	0.08	0.09
SQFM8	WISDOM 12NNE	MT	0.08E	0.09
OTG	WORTHINGTON AIRPORT	MN	0.08	0.09
BHMM8	WYOLA 25WSW	MT	0.08	0.09
ZIRC2	ZIRKEL	CO	0.08E	0.09
ANTI4	ANTHON 3E	IA	0.07E	0.08
AVCM5	AVOCA	MN	0.07E	0.08
BONW4	BONDURANT SCHOOL	WY	0.07E	0.08
CYTS2	CLAYTON, WOLF CR	SD	0.07E	0.08
COUN8	COURTENAY 1NW	ND	0.07E	0.08
CROS2	CROCKER 6SW	SD	0.07E	0.08
DSMS2	DE SMET	SD	0.07E	0.08
DINM8	DILLON 9SSE	MT	0.07E	0.08
FWWM8	FORKS 4NNE	MT	0.07E	0.08
GNAM8	GLENTANA 4SW	MT	0.07E	0.08
GRNM8	GRANT 5SE	MT	0.07E	0.08
HFDN8	HANNAFORD	ND	0.07E	0.08
KTHN8	KATHRYN	ND	0.07E	0.08
MVLI4	MISSOURI VALLEY 1NNE	IA	0.07E	0.08
NEOI4	NEOLA	IA	0.07E	0.08
OPMM8	OPHEIM 12SSE	MT	0.07E	0.08
PINW4	PINEDALE 1NE	WY	0.07E	0.08
JAMN8	PIPESTEM RES	ND	0.07	0.08
PIH	POCATELLO	ID	0.07	0.08
POGM8	PORT OF MORGAN	MT	0.07E	0.08
SRMS2	RAMONA	SD	0.07E	0.08
RAY52	RAYMOND 3NE	SD	0.07E	0.08
SSKW4	RIVERSIDE, SPRING CR	WY	0.07E	0.08
SLMS2	SALEM 5NE	SD	0.07E	0.08
SIXI4	SIOUX CENTER 2SE	IA	0.07E	0.08

SIOI4	SIOUX CITY, PERRY CR	IA	0.07	0.08
SPAW4	SOUTH PASS CITY	WY	0.07E	0.08
WHTI4	WASHTA	IA	0.07E	0.08
WYLM8	WYOLA 1SW	MT	0.07E	0.08
ADRM5	ADRIAN	MN	0.06E	0.06
ALTI4	ALTON, FLOYD R	IA	0.06E	0.06
BXCW4	BOXELDER, BOXELDER C	WY	0.06E	0.06
BRTS2	BRITTON 9NW	SD	0.06E	0.06
BBRW4	BUFFALO BILL ABV	WY	0.06E	0.06
BULW4	BULL LAKE OUTFLOW	WY	0.06E	0.06
BYI	BURLEY AIRPORT	ID	0.06E	0.06
DSM	DES MOINES	IA	0.06	0.06
DMX	DES MOINES WFO	IA	0.06E	0.06
DLLM8	DILLON (UM WESTERN)	MT	0.06E	0.06
ERLI4	EARLING	IA	0.06E	0.06
EKHM8	ELKHORN RAWS	MT	0.06	0.06
FFDS2	FREDERICK	SD	0.06E	0.06
GNTM8	GRANT	MT	0.06E	0.06
GRYI4	GRAY	IA	0.06E	0.06
HRDM5	HARDWICK	MN	0.06E	0.06
PCHI4	HINTON 4W, PERRY CR	IA	0.06E	0.06
HOWS2	HOWARD	SD	0.06E	0.06

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STATION			PERIOD
ID	DESCRIPTION	STATE	06/23 SUM
IDA	IDAHO FALLS	ID	0.06 0.06
KNNM5	KENNETH 3NE	MN	0.06E 0.06
KWNK1	KIRWIN 1S	KS	0.06E 0.06
KRWK1	KIRWIN DAM	KS	0.06 0.06
LCRW4	LARSEN CREEK SNOTEL	WY	0.06E 0.06
LEBI4	LEBANON 4SE	IA	0.06E 0.06
LLAS2	LEOLA	SD	0.06E 0.06
LVGM8	LIVINGSTON 12S	MT	0.06E 0.06
LSHI4	LOESS HILLS RAWS	IA	0.06E 0.06
MONI4	MONDAMIN	IA	0.06E 0.06
MTRS2	MONTROSE 8N	SD	0.06E 0.06
OLFW4	OLD FAITHFUL	WY	0.06E 0.06
ORCI4	ORANGE CITY	IA	0.06 0.06
PSGI4	PISGAH, SOLDIER R	IA	0.06E 0.06
RCH	RED CANYON	WY	0.06E 0.06
RAPI4	ROCK RAPIDS, ROCK R	IA	0.06E 0.06
SHEI4	SHELBY	IA	0.06E 0.06
SHYN8	SHEYENNE	ND	0.06E 0.06
SOU	SOUTH PASS CITY 2WNW	WY	0.06E 0.06
SULM8	SULA 3ENE	MT	0.06E 0.06
TRNI4	TURIN 4SW, M-H DITCH	IA	0.06E 0.06
TURI4	TURIN, LTL SIOUX R	IA	0.06E 0.06
AMW	AMES AIRPORT	IA	0.05 0.05
ASHI1	ASHTON	ID	0.05E 0.05
BZEM8	BOZEMAN STATE UNIV	MT	0.05E 0.05
CLKC2	CLARK	CO	0.05E 0.05
DPCM8	DEEP CREEK PASS	MT	0.05E 0.05
DOSS2	DOLAND	SD	0.05E 0.05
DOLS2	DOLAND	SD	0.05E 0.05

DOOI4	DOON 4ENE	IA	0.05E	0.05
FRDM8	FRENCHMAN DAM	MT	0.05E	0.05
GCEN8	GRACE CITY, JAMES R	ND	0.05	0.05
HECS2	HECLA	SD	0.05E	0.05
HODS2	HOWARD 11WSW	SD	0.05E	0.05
IRWI4	IRWIN 3ESE	IA	0.05E	0.05
SXNI4	JAMES 4W	IA	0.05E	0.05
TIZM8	JEFFERSON CITY	MT	0.05E	0.05
MTNW4	KINNEAR 9WNW	WY	0.05E	0.05
LANW4	LANDER, POPO AGIE R	WY	0.05E	0.05
LARM8	LAURIN 2NE	MT	0.05E	0.05
LAWI4	LAWTON	IA	0.05E	0.05
LSXI4	LITTLE SIOUX 2NW	IA	0.05	0.05
LORI4	LORIMOR	IA	0.05E	0.05
JSLN8	LUDDEN 6SW, JAMES R	ND	0.05E	0.05
LUVMS	LUVERNE, ROCK R	MN	0.05E	0.05
MRFS2	MADISON 2SE	SD	0.05E	0.05
MCHN8	MCHENRY 3W	ND	0.05E	0.05
MULM8	MULE CREEK	MT	0.05E	0.05
TCKW4	NORRIS JUNCTION 1NW	WY	0.05E	0.05
OFAW4	OLD FAITHFUL	WY	0.05E	0.05
ORDS2	ORDWAY 1S, ELM R	SD	0.05E	0.05
PALK1	PAOLA 10W	KS	0.05E	0.05
RKVI4	ROCK VALLEY, ROCK R	IA	0.05	0.05

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RKPM8	ROCKER PEAK	MT	0.05E	0.05
SQUI4	SIOUX CITY 8N	IA	0.05E	0.05
8D3	SISSETON	SD	0.05	0.05
SSSS2	SISSETON	SD	0.05E	0.05
SSCN1	SOUTH SIOUX CITY	NE	0.05E	0.05
TURS2	TURTON	SD	0.05	0.05
TWF	TWIN FALLS AIRPORT	ID	0.05E	0.05
WEYM8	WEST YELLOWSTONE 9NW	MT	0.05E	0.05
WISM8	WISDOM	MT	0.05E	0.05
WRVM8	WISE RIVER 3WNW	MT	0.05E	0.05
BCRW4	BATES CREEK	WY	0.04E	0.04
BGDW4	BIG GOOSE CREEK ABV	WY	0.04E	0.04
BWSM8	BOZEMAN 4W AGRIMET	MT	0.04E	0.04
BRTM8	BRITTON SPRINGS	MT	0.04E	0.04
BWXW4	BUFFALO BILL RES	WY	0.04E	0.04
CARS2	CARTHAGE	SD	0.04	0.04
POCW4	CLARK 20WSW	WY	0.04E	0.04
SFOW4	CODY 19SW	WY	0.04E	0.04
COYW4	CODY 21SW	WY	0.04E	0.04
CRII4	CORRECTIONVILLE 1SW	IA	0.04E	0.04
EGYN8	EDGELEY 3WNW	ND	0.04E	0.04
ELRC2	ELK RIVER #2	CO	0.04E	0.04
ELLS2	FREDERICK 4SW	SD	0.04E	0.04
ERFS2	FREDERICK 9W, ELM R	SD	0.04	0.04
MAPS2	FREDERICK, MAPLE R	SD	0.04E	0.04
FTRN8	FT RANSOM 4NNE	ND	0.04E	0.04
GAAM8	GALENA RAWS	MT	0.04E	0.04

GFDN8	GLENFIELD	ND	0.04E	0.04
GRNI4	GREENFIELD	IA	0.04E	0.04
HWKM5	HARDWICK 2NW	MN	0.04E	0.04
JKSN1	JACKSON	NE	0.04E	0.04
JMEI4	JAMES 1NE, FLOYD R	IA	0.04E	0.04
LEMI4	LE MARS	IA	0.04E	0.04
LDRI1	LEADORE	ID	0.04E	0.04
MDKN8	MADDOCK	ND	0.04E	0.04
MIW	MARSHALLTOWN AIRPORT	IA	0.04	0.04
MENM8	MENARD 3NE	MT	0.04E	0.04
MLNS2	MILLTOWN, JAMES R	SD	0.04E	0.04
BOUM8	MONTANA DEV CENTER	MT	0.04E	0.04
MONN8	MONTPELIER	ND	0.04	0.04
MONS2	MONTROSE	SD	0.04E	0.04
NRKN8	NEW ROCKFORD	ND	0.04E	0.04
NRDN8	NEW ROCKFORD, JAMES R	ND	0.04E	0.04
OAKI4	OAKLAND	IA	0.04E	0.04
FOFW4	OLD FAITHFUL	WY	0.04E	0.04
OPNM8	OPHEIM 10N	MT	0.04E	0.04
PARS2	PARKSTON 8ENE	SD	0.04E	0.04
PNDW4	PINEDALE	WY	0.04E	0.04
SXGI4	SIOUX CITY	IA	0.04	0.04
TRIM8	TRIDENT	MT	0.04E	0.04
WTRM8	WHITEWATER	MT	0.04E	0.04
WCRM8	WICKED CREEK RAWS	MT	0.04E	0.04
PRMM8	WILD HORSE RAWS	MT	0.04E	0.04

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ID	DESCRIPTION	STATE	06/23	PERIOD SUM
OLF	WOLF POINT	MT	0.04	0.04
BHRM8	YELLOWTAIL DAM	MT	0.04E	0.04
ADAI4	ADAIR 2NNW	IA	0.03E	0.04
ADRN8	ADRIAN	ND	0.03E	0.04
ALPS2	ALPENA, SAND CR	SD	0.03E	0.04
ARWN8	ARROWWOOD LAKE	ND	0.03E	0.04
BLMI4	BLOOMFIELD 1WNW	IA	0.03	0.04
BOI	BOISE WFO	ID	0.03E	0.04
BTPS2	BUFFALO TRADING POST	SD	0.03E	0.04
CHRI4	CHARITON 1E	IA	0.03	0.04
CHTI4	CHARITON 5SSE	IA	0.03E	0.04
CHES2	CHESTER 2N	SD	0.03E	0.04
CMBI4	COLUMBIA	IA	0.03E	0.04
CNDS2	CONDE	SD	0.03E	0.04
DYTW4	DAYTON	WY	0.03E	0.04
DRXM7	DREXEL	MO	0.03E	0.04
DUBW4	DUBOIS, WIND R	WY	0.03	0.04
EDMN8	EDMUNDS ARROWWOOD	ND	0.03E	0.04
ELKC2	ELK RIVER	CO	0.03E	0.04
EMLS2	ELM LAKE 4NW	SD	0.03E	0.04
FSNW4	FARSON 5N	WY	0.03E	0.04
FRHM8	FROHNER MEADOW	MT	0.03E	0.04
FLTN8	FULLERTON 1ESE	ND	0.03E	0.04
0189N8	FULLERTON 1NE	ND	0.03E	0.04
GLEM8	GLEN 2E	MT	0.03E	0.04

KMLS2	GROTON 7NW	SD	0.03E	0.04
Ø182N8	GUELPH 1NW	ND	0.03E	0.04
HNKI4	HANCOCK, WEST NISH	IA	0.03E	0.04
HITI4	HONEY CREEK 1SE	IA	0.03	0.04
KSLN8	KENSAL 8NNW, JAMES R	ND	0.03E	0.04
LNGS2	LANGFORD	SD	0.03E	0.04
LPRW4	LAPRELE CREEK	WY	0.03E	0.04
RBYM8	LAURIN 2SW	MT	0.03E	0.04
P69	LOWELL	ID	0.03	0.04
MARN8	MARION 3S	ND	0.03E	0.04
MCW	MASON CITY AIRPORT	IA	0.03	0.04
MEDN8	MEDINA	ND	0.03E	0.04
PCMI4	MERRILL 6SW	IA	0.03E	0.04
MOVI4	MOVILLE	IA	0.03E	0.04
MSSM7	MUSSEL FORK	MO	0.03	0.04
MYSM8	MYSTIC LAKE	MT	0.03E	0.04
OTOI4	OTO	IA	0.03E	0.04
OTM	OTTUMWA	IA	0.03	0.04
BRW4	PINEDALE 14SE	WY	0.03E	0.04
PLSM8	POLARIS 4N	MT	0.03E	0.04
PSPN1	PONCA STATE PARK	NE	0.03E	0.04
RRSS2	ROSCO	SD	0.03E	0.04
ROSS2	ROSCOE	SD	0.03	0.04
WREM8	ROSCOE, W ROSEBUD CR	MT	0.03E	0.04
RLYS2	ROSLYN	SD	0.03E	0.04
ALRM8	RUBY DAM	MT	0.03E	0.04
SLNI1	SALMON	ID	0.03E	0.04
SFKW4	SOUTH FORK	WY	0.03E	0.04

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ID	DESCRIPTION	STATE	06/23	SUM
SPCW4	SOUTH PASS CITY 3NNE	WY	0.03E	0.04
TWRW4	TOWER FALLS	WY	0.03E	0.04
TFW4	TOWER FALLS STATION	WY	0.03E	0.04
TNBM8	TWIN BRIDGES	MT	0.03E	0.04
VLRW4	VALLEY 9NNE	WY	0.03E	0.04
WAPW4	WAPITI 1NE	WY	0.03E	0.04
WLBNI	WILBER, TURKEY CR	NE	0.03	0.04
WTON8	WILTON	ND	0.03	0.04
WRSM8	WISE RIVER RAWS	MT	0.03E	0.04
WLFM8	WOLF POINT	MT	0.03E	0.04
YLAW4	YELLOWSTONE(MAMMOTH)	WY	0.03E	0.04
BKCI4	AKRON 11E	IA	0.02E	0.02
ATLI4	ATLANTIC 1NE	IA	0.02	0.02
AUDI4	AUDUBON	IA	0.02	0.02
BZLM8	BOZEMAN 5W	MT	0.02E	0.02
BZMM8	BOZEMAN 6W EXP FARM	MT	0.02E	0.02
Ø885N8	BREMEN 4NW	ND	0.02E	0.02
BRIM8	BRIDGER 5SE	MT	0.02E	0.02
SBFM8	BRIDGER 9SE	MT	0.02	0.02
BKTI4	BROKEN KETTLE RAWS	IA	0.02E	0.02
BNSI4	BRONSON	IA	0.02E	0.02
CRNN8	CARRINGTON 4N	ND	0.02E	0.02
CSPW4	CASPER MOUNTAIN	WY	0.02E	0.02

CMRW4	CASPER MOUNTAIN	WY	0.02E	0.02
CCSW4	CASTLE CREEK SNOTEL	WY	0.02E	0.02
CNTI4	CENTERVILLE	IA	0.02	0.02
SCCS2	CHESTER, SKUNK CR	SD	0.02E	0.02
WYSH10	CLEARMONT 5NNE	WY	0.02	0.02
OBWA4	CODY 12SE	WY	0.02E	0.02
CMBS2	COLUMBIA 1S, JAMES R	SD	0.02E	0.02
CLBS2	COLUMBIA 1W	SD	0.02	0.02
CSTI4	CRESCENT	IA	0.02E	0.02
CRTI4	CRESTON 2SW	IA	0.02E	0.02
DELS2	DELL RAPIDS	SD	0.02E	0.02
DERS2	DELL RAPIDS 2SW	SD	0.02E	0.02
DERI4	DERBY	IA	0.02E	0.02
EDGN8	EDGELEY 3W	ND	0.02E	0.02
ELLN8	ELLENDAL 1N	ND	0.02E	0.02
ELMM8	ENNIS LAKE	MT	0.02E	0.02
ENNM8	ENNIS RAWS	MT	0.02E	0.02
EXII4	EXIRA	IA	0.02E	0.02
FORN8	FORBES 10NW	ND	0.02E	0.02
0190N8	FORBES 4NE	ND	0.02E	0.02
FCLN1	FORT CALHOUN 4W	NE	0.02	0.02
FCRM8	FRENCH CREEK RAWS	MT	0.02E	0.02
GLNW4	GLENROCK, N PLATTE R	WY	0.02E	0.02
GTHI4	GUTHRIE CENTER	IA	0.02	0.02
HRLI4	HARLAN 1N	IA	0.02	0.02
HRTN1	HARTINGTON	NE	0.02	0.02
HBRM8	HEBGEN LAKE RAWS	MT	0.02E	0.02
HOMN1	HOMER 3NE	NE	0.02E	0.02
HOES2	HOSMER 9E	SD	0.02E	0.02
HOUS2	HOUGHTON 4SE	SD	0.02E	0.02

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HUMS2	HUMBOLT	SD	0.02E	0.02
HON	HURON	SD	0.02	0.02
IRHW4	IRISH ROCK	WY	0.02E	0.02
KENI4	KENNEBEC, LTL SIOUX	IA	0.02	0.02
MOFSA041	KEYTESVILLE	MO	0.02E	0.02
KRWW4	KIRWIN	WY	0.02E	0.02
LMRN8	LA MOURE	ND	0.02E	0.02
LDRW4	LANDER 3W	WY	0.02E	0.02
HCMC2	LEADVILLE 8SW	CO	0.02E	0.02
LOLS2	LEOLA 1E	SD	0.02E	0.02
LIVM8	LIVINGSTON 5S	MT	0.02E	0.02
LLFM8	LOGAN 1E	MT	0.02E	0.02
LNGM8	LOGAN 2W	MT	0.02E	0.02
MADM8	MADISON DAM BLO	MT	0.02E	0.02
MCLM8	MC LEOD 12SSW	MT	0.02E	0.02
MTEW4	MEETEETSE	WY	0.02E	0.02
MLRM8	MELROSE 7S	MT	0.02E	0.02
MIRS2	MILLER 1NW	SD	0.02E	0.02
MOLI4	MOULTON, CHARITON R	IA	0.02E	0.02
NYEM8	NYE #2	MT	0.02E	0.02
OKSN8	OAKES 6SE	ND	0.02	0.02

PWDN8	PAINTED WOODS CR	ND	0.02E	0.02
PANI4	PANORA	IA	0.02E	0.02
PGEN8	PINGREE, PIPESTEM CR	ND	0.02E	0.02
PRYM8	PRYOR	MT	0.02E	0.02
BSHW4	RYAN PARK, BRUSH CR	WY	0.02E	0.02
SUX	SIOUX CITY	IA	0.02	0.02
SBLW4	SODA BUTTE CREEK	WY	0.02E	0.02
SLBW4	SUNLIGHT BASIN	WY	0.02E	0.02
TQE	TEKAMAH	NE	0.02	0.02
TEKN1	TEKAMAH	NE	0.02E	0.02
VDIM7	VANDIKE FARMS 4NNE	MO	0.02	0.02
RANS2	VEBLEN 5W	SD	0.02E	0.02
VIRS2	VIRGIL (AMRAD)	SD	0.02E	0.02
VACM8	VIRGINIA CITY	MT	0.02E	0.02
WBR52	WEBSTER	SD	0.02E	0.02
WYSM8	WEST YELLOWSTONE	MT	0.02E	0.02
WEY	WEST YELLOWSTONE	MT	0.02E	0.02
MDSM8	WEST YELLOWSTONE 2E	MT	0.02E	0.02
WPTS2	WESTPORT	SD	0.02	0.02
WSTS2	WESTPORT 3SE	SD	0.02E	0.02
0126N8	WILTON 7NE	ND	0.02E	0.02
YLWW4	YELLOWSTONE(MAMMOTH)	WY	0.02E	0.02
ALBI4	ALBIA 3NNE	IA	0.01	0.01
ALTS2	ALCESTER	SD	0.01E	0.01
ALXS2	ALEXANDRIA	SD	0.01E	0.01
ALNN1	ALLEN	NE	0.01E	0.01
ALRI4	ALLERTON	IA	0.01E	0.01
ASHS2	ASHTON 2SW	SD	0.01E	0.01
HTOS2	ASHTON 5E	SD	0.01E	0.01
ATNS2	ASHTON, JAMES R	SD	0.01	0.01
ATCI4	ATLANTIC 5SW, E NISH	IA	0.01E	0.01
BEFM8	AUGUSTA 21WSW	MT	0.01	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC

DATE=Jun 23, 2011 - 14:02:16

STATION				PERIOD
ID	DESCRIPTION	STATE	06/23	SUM
-----	-----	-----	-----	-----
AVOI4	AVOCA	IA	0.01E	0.01
BABM8	BABB 4SW	MT	0.01E	0.01
BHK	BAKER	MT	0.01	0.01
BAKM8	BAKER	MT	0.01E	0.01
0134N8	BALDWIN 1W	ND	0.01E	0.01
BFRN8	BALFOUR 3SW	ND	0.01E	0.01
BAYI4	BAYARD 6SE	IA	0.01E	0.01
BEGN1	BENNINGTON 3E	NE	0.01E	0.01
BLIN8	BERLIN	ND	0.01E	0.01
BPI	BIG PINEY	WY	0.01	0.01
BLON1	BLOOMFIELD	NE	0.01	0.01
LMBW4	BOLES SPRING	WY	0.01E	0.01
BOWS2	BOWDLE	SD	0.01E	0.01
BWDS2	BOWDLE	SD	0.01E	0.01
BRDM8	BREDETTE	MT	0.01E	0.01
BFTS2	BRENTFORD	SD	0.01E	0.01
BTWS2	BRENTWOOD COLONY	SD	0.01E	0.01
BDGM8	BRIDGER 2N	MT	0.01E	0.01
BRSS2	BRISTOL 5SW	SD	0.01E	0.01

BRLS2	BRISTOL 7S	SD	0.01E	0.01
BLDS2	BROADLAND 5NE	SD	0.01E	0.01
BRKM7	BROOKFIELD	MO	0.01E	0.01
BEKM7	BROOKFIELD	MO	0.01E	0.01
MNKI4	BRUNSVILLE	IA	0.01E	0.01
BLBW4	BUFFALO BILL DAM	WY	0.01E	0.01
CDYW4	BUFFALO BILL DAM	WY	0.01E	0.01
BTTM8	BUTTE 8S	MT	0.01E	0.01
BTM	BUTTE FAA AIRPORT	MT	0.01	0.01
CNNS2	CANTON	SD	0.01E	0.01
CNTS2	CANTON (AMRAD)	SD	0.01E	0.01
CANS2	CANTON, BIG SIOUX R	SD	0.01E	0.01
CARN8	CARRINGTON	ND	0.01E	0.01
CRGN8	CARRINGTON 4N	ND	0.01E	0.01
CSNI4	CARSON 3NNE	IA	0.01E	0.01
CSHM8	CASHE CREEK	MT	0.01E	0.01
0581N8	CENTER 1E	ND	0.01E	0.01
CETN8	CENTER 4SE	ND	0.01E	0.01
CHRW4	CHRISTINA LAKE	WY	0.01E	0.01
CLAW4	CLARK 3NE	WY	0.01E	0.01
CLAN1	CLATONIA	NE	0.01E	0.01
CLRW4	CLEARMONT 5SW	WY	0.01E	0.01
WYSH11	CLEARMONT 9WSW	WY	0.01E	0.01
COOW4	CODY 5SE	WY	0.01E	0.01
CLEN1	COLERIDGE	NE	0.01E	0.01
COLS2	COLTON	SD	0.01E	0.01
COYI4	CORYDON 2NE	IA	0.01E	0.01
COUW4	COULTER CREEK	WY	0.01E	0.01
CTEN1	CRETE	NE	0.01E	0.01
CRTN1	CRETE 1W, BIG BLUE R	NE	0.01E	0.01
CRFN1	CROFTON	NE	0.01E	0.01
DEVW4	DEAVER	WY	0.01E	0.01
DCTN1	DECATUR, MISSOURI R	NE	0.01E	0.01
DLMM8	DELMOE RAWS	MT	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
 DATE=Jun 23, 2011 - 14:02:16

STATION				PERIOD
ID	DESCRIPTION	STATE	06/23	SUM
DVDM8	DIVIDE, BIG HOLE R	MT	0.01E	0.01
DRGN1	DORCHESTER, BIG BLUE	NE	0.01E	0.01
DKEN8	DRAKE 8NE	ND	0.01E	0.01
ECHW4	ECHETA 2NW	WY	0.01E	0.01
WHSM8	ELK PEAK SNOTEL	MT	0.01E	0.01
ELNN8	ELLENDAL 9NW	ND	0.01E	0.01
ENSM8	ENNIS	MT	0.01E	0.01
ETHS2	ETHAN	SD	0.01E	0.01
FERS2	FERNEY	SD	0.01E	0.01
FTBS2	FORESTBURG 3NE	SD	0.01E	0.01
FTCN1	FORT CALHOUN	NE	0.01E	0.01
FPKS2	FRANKFORT	SD	0.01E	0.01
FNDN1	FRIEND 3E	NE	0.01E	0.01
0388N8	GACKLE 11S	ND	0.01E	0.01
KSJO13	GARDNER 3SE	KS	0.01E	0.01
GARS2	GARRETSON	SD	0.01E	0.01
AGSM8	GIBSON DAM	MT	0.01E	0.01

GDMM8	GIBSON LAKE	MT	0.01E	0.01
GTOM8	GOAT HAUNT MOUNTAIN	MT	0.01E	0.01
0371N8	GRAND RAPIDS 3SW	ND	0.01E	0.01
GRCM7	GREEN CITY 5N	MO	0.01E	0.01
GWDI4	GRISWOLD	IA	0.01E	0.01
GROS2	GROTON	SD	0.01E	0.01
0592N8	HANNOVER 3E	ND	0.01E	0.01
REPN1	HARLAN COUNTY DAM	NE	0.01E	0.01
HFDS2	HARTFORD	SD	0.01E	0.01
HSII4	HASTINGS 4NE	IA	0.01E	0.01
HZTN8	HAZELTON 4NW	ND	0.01E	0.01
HBGM8	HEBGEN DAM	MT	0.01E	0.01
HBDM8	HEBGEN DAM	MT	0.01E	0.01
HRMN1	HERMAN	NE	0.01E	0.01
HMAN1	HERMAN	NE	0.01E	0.01
HMNN1	HERMAN 4WSW	NE	0.01E	0.01
SHIM5	HILLS	MN	0.01E	0.01
INSM8	HINSDALE 2E	MT	0.01E	0.01
HINM8	HINSDALE 4SW	MT	0.01E	0.01
HCKS2	HITCHCOCK	SD	0.01E	0.01
HMRN1	HOMER, OMAHA CR	NE	0.01E	0.01
HORI4	HORNICK 5S	IA	0.01E	0.01
HOMS2	HOSMER 1E	SD	0.01E	0.01
HUDW4	HUDSON	WY	0.01E	0.01
HRNS2	HURON	SD	0.01E	0.01
IWDI4	INWOOD	IA	0.01E	0.01
INWI4	INWOOD	IA	0.01E	0.01
IPSS2	IPSWICH	SD	0.01E	0.01
IRLN1	IRVINGTON 4NW	NE	0.01E	0.01
JACM8	JACKSON	MT	0.01E	0.01
JRNM8	JORDAN 43ENE	MT	0.01E	0.01
KLYM8	KELLY RAWS	MT	0.01E	0.01
KEBN1	KENNARD 2SE	NE	0.01E	0.01
LMRW4	LAMAR RANGER STATION	WY	0.01E	0.01
LNRW4	LANDER 1N	WY	0.01E	0.01
MLBW4	LANDER 2SSW	WY	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1

- 03/20/07) USER=MBRFC

DATE=Jun 23, 2011 - 14:02:16

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STATION				PERIOD
ID	DESCRIPTION	STATE	06/23	SUM
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LND	LANDER AIRPORT	WY	0.01	0.01
LTRW4	LEITER 9N	WY	0.01E	0.01
LSTI4	LESTER	IA	0.01E	0.01
LLNN1	LINCOLN FIRE STA 5	NE	0.01E	0.01
LVNN1	LINCOLN, STEVENS CR	NE	0.01	0.01
LNTN8	LINTON	ND	0.01E	0.01
LINN8	LINTON 4N	ND	0.01	0.01
LTNN8	LINTON 5NW	ND	0.01E	0.01
BVRN8	LINTON, BEAVER CR	ND	0.01E	0.01
LBHM8	LITTLE BIG HORN RAWS	MT	0.01E	0.01
SLDM8	LIVINGSTON 7NE	MT	0.01E	0.01
LVM	LIVINGSTON AIRPORT	MT	0.01E	0.01
LRGM8	LIVINGSTON AIRPORT	MT	0.01	0.01
LVAM7	LIVONIA	MO	0.01E	0.01
LVZM7	LIVONIA, CHARITON R	MO	0.01	0.01

LDGM8	LODGE GRASS	MT	0.01E	0.01
LOGM8	LOGAN, GALLATIN R	MT	0.01E	0.01
LOVW4	LOVELL	WY	0.01E	0.01
LYMI4	LYMAN	IA	0.01E	0.01
QADW4	MAMMOTH 25WSW	WY	0.01E	0.01
MREN8	MANDAREE, BEAR DEN CR	ND	0.01E	0.01
MRON8	MARION	ND	0.01E	0.01
MARN1	MARTINSBURG	NE	0.01E	0.01
MSNI4	MASSENA	IA	0.01E	0.01
MAXN1	MAX 13N	NE	0.01E	0.01
MLKN8	MCCLUSKY	ND	0.01E	0.01
MRLI4	MERRILL, FLOYD R	IA	0.01E	0.01
MSAM8	MISSOULA 2NE	MT	0.01E	0.01
MSO	MISSOULA SITE 1	MT	0.01	0.01
MJTW4	MORAN 5SW	WY	0.01E	0.01
MRAW4	MORAN 5WSW	WY	0.01E	0.01
MTNM8	MOULTON RESERVOIR	MT	0.01E	0.01
CBAS2	MUD LAKE OUTLET	SD	0.01E	0.01
OAKN1	OAKLAND	NE	0.01E	0.01
ONKS2	ONAKA 2N	SD	0.01E	0.01
ONAI4	ONAWA	IA	0.01	0.01
OSEI4	OSCEOLA	IA	0.01	0.01
OWLW4	OWL CREEK	WY	0.01E	0.01
PAIN1	PALISADE	NE	0.01E	0.01
PALN1	PALISADE, FRENCHMAN	NE	0.01	0.01
VRPS2	PARKER, EAST FORK	SD	0.01	0.01
TUNMB	PECULIAR 2SW	MO	0.01E	0.01
PECM7	PECULIAR 3SW	MO	0.01E	0.01
PTNM8	PETERSON MEADOWS	MT	0.01E	0.01
HAFW4	PINEDALE	WY	0.01E	0.01
PLEM8	PLEVNA	MT	0.01E	0.01
PRMI4	PROMISE CITY 6NW	IA	0.01E	0.01
RDFS2	REDFIELD	SD	0.01E	0.01
3DE	REDFIELD	SD	0.01E	0.01
RFDS2	REDFIELD, JAMES R	SD	0.01	0.01
RESS2	REE HEIGHTS, WOLF CR	SD	0.01E	0.01
RGNN8	REGAN 6NE	ND	0.01E	0.01
RENS2	RENNER	SD	0.01E	0.01

1NWSRFS FORECAST SYSTEM - PROGRAM PPDUTIL (VERSION: ob8.1 - 03/20/07) USER=MBRFC
 DATE=Jun 23, 2011 - 14:02:16

ID	DESCRIPTION	STATE	06/23	PERIOD SUM
RIMM8	RIMINI 4NE	MT	0.01E	0.01
MBLW4	SARATOGA 16SE	WY	0.01E	0.01
SFSW4	SHERIDAN 7NW	WY	0.01E	0.01
SLVM8	SILVER LAKE	MT	0.01E	0.01
FSD	SIOUX FALLS	SD	0.01	0.01
SIOS2	SIOUX FALLS	SD	0.01E	0.01
EROS2	SIOUX FALLS 14NE	SD	0.01E	0.01
SFLS2	SIOUX FALLS 38A	SD	0.01E	0.01
SXFS2	SIOUX FALLS NO CLIFF	SD	0.01E	0.01
FSDS2	SIOUX FALLS WFO	SD	0.01E	0.01
STJN1	ST JAMES	NE	0.01E	0.01
SKTK1	STOCKTON 9N, BOW CR	KS	0.01E	0.01
SFDS2	STRATFORD, JAMES R	SD	0.01E	0.01

SONN1	STRATTON	NE	0.01E	0.01
STTN1	STRATTON, REPUB R	NE	0.01	0.01
SRON1	STRATTON, REPUB R	NE	0.01E	0.01
STRN8	STREETER 5NW	ND	0.01E	0.01
SREN8	STREETER 5NW	ND	0.01E	0.01
SFMS2	SUX FALLS, MAPLE ST	SD	0.01	0.01
SYLW4	SYLVAN LAKE	WY	0.01E	0.01
TOLS2	TOLSTOY 6N	SD	0.01E	0.01
TRUW4	TROUT CREEK	WY	0.01E	0.01
TULS2	TULARE, TURTLE CR	SD	0.01E	0.01
VLVN8	VELVA	ND	0.01E	0.01
AXTM8	VIRGINIA CITY 15SE	MT	0.01E	0.01
WLPS2	WALL LAKE	SD	0.01	0.01
WLKS2	WALL LAKE	SD	0.01E	0.01
WPRW4	WAPITI 1W	WY	0.01E	0.01
WASN8	WASHBURN	ND	0.01E	0.01
WSBN8	WASHBURN, MISSOURI R	ND	0.01E	0.01
WSYM8	WEST YELLOWSTONE	MT	0.01E	0.01
WYS	WEST YELLOWSTONE	MT	0.01E	0.01
WGSM8	WHITE SULPHUR SPRNGS	MT	0.01E	0.01
WSSM8	WHITE SULPHUR SPRNGS	MT	0.01E	0.01
WHHM8	WHITEHALL RAWLS	MT	0.01E	0.01
WIGN8	WING	ND	0.01E	0.01
WHKN8	WISHEK	ND	0.01E	0.01
WISN8	WISHEK 6W	ND	0.01	0.01
WODM8	WOOD CREEK	MT	0.01E	0.01
WDWN8	WOODWORTH 3E	ND	0.01E	0.01
YKN	YANKTON	SD	0.01	0.01
WYGM8	YELLOWSTONE GATEWAY	MT	0.01E	0.01

>>>>>>> STOP

0*****

0 CPU TIME USED = 0 MINUTES, 0 SECONDS

0 CLOCK TIME USED = 0 MINUTES, 0 SECONDS

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From: North Dakota Joint Information Center [ndjic@nd.gov]
Sent: Thursday, June 23, 2011 9:09 AM
Subject: News Release - Voluntary Evacuation Extended Through 8 a.m. Friday

NEWS RELEASE

For Immediate Release:
Information, Contact:

For More

June 23, 2011

Thursday, 8:00 am
1306

701-355-

Gloria David 701-220-2470

Public Information Officer

Voluntary Evacuation Extended Through 8 a.m. Friday

BISMARCK, N.D. - Based on the current river level and observed conditions, the voluntary evacuation order for the Southport and Harbor Drive area remains in effect through 8:00 am on Friday, June 24. An update on the evacuation order status will be issued at 8:00 am.

Riverwood Drive and Mills Avenue will be opening at 9:00 am today.

The shuttle will begin operation at 9:00 am today.

For more information visit www.bismarck.org

###

[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 9:07 AM
To: McMahon, John R BG NWD; Anderson, G Witt NWD; [REDACTED]
[REDACTED], Farhat, Jody S NWD02; Blechinger, Erik T NWO
Cc: Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK
Subject: RE: Master Manual (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sir,

This approach would be OK for an initial reaction to this year's flooding. For the long term, a reenergizing of MRAPS would be a better mechanism.

[REDACTED]

Director Regional Business
Northwestern Division, USACE
Phone: [REDACTED]
BB: [REDACTED]

-----Original Message-----

From: McMahon, John R BG NWD
Sent: Thursday, June 23, 2011 3:18 AM
To: Anderson, G Witt NWD; [REDACTED] NWD; [REDACTED] NWD; Farhat, Jody S NWD02; Blechinger, Erik T NWO; [REDACTED] NWD
Cc: Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK
Subject: Fw: Master Manual
Importance: High

Team:

Would be interested in some feedback on this, as I know it's a hot topic of discussion. We have some time, too. Thanks.

Vr/John McMahon

From: Tom & Karla Waters <waters4@ix.netcom.com>
To: McMahon, John R BG NWD
Cc: Farhat, Jody S NWD02
Sent: Wed Jun 22 20:43:00 2011
Subject: Master Manual

Dear General McMahon:

On Monday in Jefferson City, I briefly told you about a time in the past when the Corps of Engineers made changes to the Master Manual without a full blown review and update process. Tonight, I went back and found the attached information.

In the fall of 2005 during the 2006 AOP Public Hearings, the Corps used the AOP Hearings to also take comments on a supplement to the Master Manual. See the attached Corps Document signed by then Commander General Gregg Martin.

I believe the Corps of Engineers Northwestern Division should use the same process to make quick supplemental changes to the Master Manual which will provide more available storage for Flood Control in the reservoir system.

Please review the attached document and discuss it with your staff. The need for additional flood control storage is evident with today's flooding along the Missouri River. The Basin cannot afford to go through another 14-year multimillion dollar study. We need additional storage now, beginning with next year's AOP. I hope you will consider this quick option to make the changes the entire basin needs to better protect lives and property.

Thanks,

Tom

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: Hogg, Jerry F [JHogg@ameren.com]
Sent: Thursday, June 23, 2011 9:06 AM
To: Accu-Weather; [REDACTED]; Farhat, Jody S NWD02; [REDACTED]; Hogg, Jerry F; 'Holtz, Jerry'; [REDACTED]; 'Lobb, Del'; Larry Murphy; NOAA National Weather Service; [REDACTED]; Parker, Ed; Steve Spaulding; [REDACTED]; Sullivan, Alan D; [REDACTED]; Thompson, Phil M; Weather Service Springfield; Witt, Warren A; 'andy_roberts@fws.gov'; 'Bryan_Simmons@fws.gov'
Subject: LOZ Lake Data 2011 yearly form.xls
Attachments: LOZ Lake Data 2011 yearly form.xls

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MO/YR	June	2011	PLANT		PLANT		STATISTICS						
	Total Inflow (with rain)	Inflow Avg Previous 7 Days 7DA	Prescribed Minimum Flow	Osage Plant Discharge	Midnight Lake Elev.	7:00 AM Lake Elev.	Rain at Osage Plant (in.)	Surface Water Temperature F			Inflow Forecast	Outflow Forecast	Lake Level Forecast
DATE									DATE				
1	31634	15391	3,848	31634	658.33	658.42	0.00	72	1		34,000	30,000	658.40
2	33,774	14,501	3,625	33452	658.33	658.43	0.00	72	2		34,000	30,000	658.50
3	33,235	16,535	4,133	31450	658.39	658.48	0.00	72	3		34,000	30,000	658.60
4	34,203	20,104	5,026	32361	658.45	658.50	0.00	72	4		34,000	30,000	658.75
5	33,114	24,066	8,423	31403	658.50	658.60	0.00	81	5		34,000	30,000	658.85
6	32,922	27,702	9,695	28412	658.66	658.69	0.00	81	6		32,500	30,000	658.60
7	33,584	30,618	10,716	30846	658.75	658.83	0.00	81	7		32,500	30,000	658.80
8	33,861	33,209	11,623	31629	658.82	658.80	0.00	81	8		32,700	32,000	658.80
9	33,192	33,527	11,734	37085	658.65	658.70	0.00	81	9		32,700	36,500	658.70
10	33,135	33,444	11,705	37005	658.48	658.58	0.00	81	10		32,700	36,500	658.60
11	32,812	33,430	11,700	27540	658.67	658.54	0.00	81	11		32,700	30,000	658.70
12	34,107	33,231	11,631	28815	658.86	658.80	0.00	82	12		32,700	30,000	658.90
13	33,651	33,373	11,680	29415	659.01	659.01	0.43	82	13		32,700	28,000	659.10
14	34,669	33,477	11,717	32295	659.02	659.10	0.09	82	14		32,700	32,000	659.20
15	29,568	33,632	23,353	31424	659.01	659.12	0.14	82	15		30,000	32,000	659.10
16	27,586	33,019	19,811	21224	659.24	659.08	0.00	82	16		27,000	21,000	659.30
17	18030	32,218	16,109	17786	659.23	659.35	0.00	82	17		16,000	17,000	659.28
18	8,833	30,060	10,521	13211	659.05	659.19	0.89	82	18		6,000	10,000	659.25
19	7,806	26,635	9,322	10507	658.93	658.96	0.39	83	19		6,000	9,000	659.15
20	14,026	22,877	8,007	22760	658.57	658.88	0.00	83	20		12,000	21,000	658.57
21	16,447	20,074	5,018	13666	658.66	658.50	0.10	83	21		15,000	12,000	658.77
22	16,135	17,471	4,367	12169	658.80	658.66	0.00	83	22		15,000	12,000	658.80
23		15,552	3,888			658.76			23		15,000	6,000	659.20
24									24		15,000	3,500	659.40
25									25		5,000	3,500	659.60
26									26		5,000	3,500	659.80
27									27		11,000	12,000	
28									28		11,000	12,000	
29									29		5,000	12,000	
30									30		5,000	12,000	
1									1		5,000	12,000	
2									2		5,000	5,000	
3									3		5,000	5,000	
4									4		5,000	5,000	
5									5		5,000	5,000	
6									6		5,000	5,000	
7									7		5,000	5,000	

[REDACTED]

From: North Dakota Joint Information Center [ndjic@nd.gov]
Sent: Thursday, June 23, 2011 9:03 AM
Subject: FW: Siren Testing Cancelled

Importance: High

NEWS RELEASE

FOR IMMEDIATE RELEASE

Contact: Mary Senger

Tammy Lapp-Harris

Burleigh County Emergency Manager

Morton County Emergency

Manager

701-222-6727

701-667-3307

June 23, 2011

Burleigh and Morton Counties Cancel Monthly Siren Test

Bismarck, ND— Due to the current flooding situation, the 9:30 a.m. monthly siren test scheduled for tomorrow in Burleigh and Morton Counties has been cancelled.

#

[REDACTED]

From: Monty_Gartin@cargill.com
Sent: Thursday, June 23, 2011 8:48 AM
To: Farhat, Jody S NWD02
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Ok, thanks for the update.

Monty

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [mailto:Jody.S.Farhat@usace.army.mil]

Sent: Thursday, June 23, 2011 8:39 AM

To: Gartin, Monty - Monty_Gartin@cargill.com

Cc: [REDACTED]
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Monty - I will be unable to participate in the call this morning due to a scheduling conflict, but [REDACTED] one of the team leaders in Water Management will participate on my behalf. Mike's section does the reservoir forecasts and release schedules, so he is fully capable of answering any questions you may have.

Sorry for the inconvenience.

Regards,
Jody

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]

Sent: Tuesday, June 21, 2011 2:20 PM

To: Farhat, Jody S NWD02

Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Thanks Jody!

Looking forward to speaking with you.

Monty

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [mailto:Jody.S.Farhat@usace.army.mil]

Sent: Tuesday, June 21, 2011 11:37 AM

To: Gartin, Monty - Monty_Gartin@cargill.com

Cc: [REDACTED]
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Monty, [REDACTED] and I will be available at that time. We'll dial in on the conference line you provided below.

Thanks,
Jody

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]
Sent: Tuesday, June 21, 2011 10:00 AM
To: Farhat, Jody S NWD02
Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Jody,

Thanks for your quick response and we appreciate your willingness to talk with us. With the current release schedule from Gavin's Point at 150,000 kfs we are maintaining our operations. Our discussion will focus on the triggers that could lead to an increase from Gavin's Point.

Would you be available for a :20 minute discussion with our leadership team on Thursday June 23rd, at 10:00am central time (Dial 866-318-5174 Code# 5052660998). The call would include our campus partners and leaders from the following companies on our site in Blair Nebraska:

- * Cargill Inc.
- * Evonik Inc.
- * Purac Inc.
- * Novozymes Inc.
- * Natureworks LLC.

We know how busy you are and appreciate your time and the dedication of the entire Army Corp team to minimizing the impact to our community and customers.

Regards,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of choice.

Monty Gartin | Health, Safety & Security Team Leader | Cargill Corn Milling 650 Industrial
Park Drive | Blair, NE 68008 | 402-533-1381 | Cell
402-306-3709 | monty_gartin@cargill.com

cid:609003111@05022009-1FD7 Caring Leadership > Systems Excellence > Injury Free Lifestyle

-----Original Message-----

From: Jody.S.Farhat@usace.army.mil [mailto:Jody.S.Farhat@usace.army.mil]

Sent: Thursday, June 16, 2011 1:34 PM

To: Gartin, Monty - Monty_Gartin@cargill.com

Cc: [REDACTED]

Subject: RE: Cargill Inc - Blair Nebraska (UNCLASSIFIED)

Classification: UNCLASSIFIED

Caveats: NONE

Monty,

We would be happy to discuss the planned releases with you. As you might expect, we are very busy with the ongoing flood event, so we would prefer setting up a conference call, or if you prefer a face-to-face meeting it would be preferable if you came to our office.

Regards,

Jody Farhat, P.E.

Chief, Missouri River Basin Water Management

jody.s.farhat@usace.army.mil

Office: 402-996-3840

-----Original Message-----

From: Monty_Gartin@cargill.com [mailto:Monty_Gartin@cargill.com]

Sent: Wednesday, June 15, 2011 4:43 PM

To: Management, Missouri Water NWD02

Subject: Cargill Inc - Blair Nebraska

To Jody Farhat and/or Staff,

We are Cargill Corn Milling in Blair Nebraska, our site is a bio-refinery which includes 6 joint ventures and has an assets value over 2 billion dollars. We have been working with the Army Corps of Engineers from the Omaha District daily. Our relationship with the Corps of engineers has been very positive and we look forward to more interactions.

We recently met with [REDACTED] to help us understand the potential impact of the current release to our site. This meeting helped us to better understand the science and the protocols used to manage the current situation on the Missouri river. [REDACTED] discussed with us his role and his understanding of the Corps future release plans.

We know how busy you are, but we would also like to meet with you or a senior member of your staff to better understand future plans and release scenarios. We have created a 3.5 mile berm around our site, but are still very concerned with the economic impact to our customers and the state of Nebraska if we shutdown.

We would like to invite you to our campus for a formal review and discussion on our mutual goals around the safety and well being of our site and community. We look forward to working with the Army Corps of Engineers in a positive and proactive manor. If coming to Blair is not feasible, we are very willing to come to you.

Thank you on behalf of our employees and community,

Monty G. Gartin

Build, operate, and maintain RIGHT to become the partner of choice.

Monty Gartin | Health, Safety & Security Team Leader |Cargill Corn Milling
650 Industrial Park Drive | Blair, NE 68008 | 402-533-1381 | Cell
402-306-3709 | monty_gartin@cargill.com

cid:609003111@05022009-1FD7 Caring Leadership > Systems Excellence > Injury

Free Lifestyle

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 8:45 AM
To: Farhat, Jody S NWD02
Subject: Upper Dakota Tribs Forecast

ZCZC MKCRVFUDT DEF
TTAA00 KKRF DDHMM
RVFUDT

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1342Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPPER DAKOTA TRIBS

: ==> This forecast includes obsd precip & 24 hours of QPF <==

RIVER/STATION	FS	TDY	F O R E C A S T
LITTLE MUDDY CREEK			
WILLISTON ND 10NE	10.0	9.9	CRESTING
MISSOURI RIVER			
BISMARCK ND	16.0	18.9	LITTLE CHANGE EXPECTED

:
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:
:
:
:WILLISTON ND 10NE - LITTLE MUDDY CREEK HSA - BIS
:FLOOD STAGE 10.0 FCST ISSUANCE STAGE 8.0

:
:LATEST STAGE 9.9 FT AT 1315Z ON 0623

.ER LMCN8 20110623 Z DC201106231342/DH18/HGIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	9.8/	9.6/	9.4
.E2 :0624:/	8.8/	8.1/	7.6/	7.0
.E3 :0625:/	6.8/	6.6/	6.3/	6.1
.E4 :0626:/	6.0/	6.0/	5.9/	5.8
.E5 :0627:/	5.7/	5.6/	5.6/	5.5
.E6 :0628:/	5.3			

:
:BISMARCK ND - MISSOURI RIVER HSA - BIS
:FLOOD STAGE 16.0 FCST ISSUANCE STAGE 14.0

:
:LATEST STAGE 18.9 FT AT 1315Z ON 0623

.ER BIWN8 20110623 Z DC201106231342/DH18/HGIF/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	18.9/	18.9/	18.9
.E2 :0624:/	18.9/	18.9/	18.9/	18.8
.E3 :0625:/	18.8/	18.8/	18.8/	18.8
.E4 :0626:/	18.8/	18.8/	18.8/	18.8
.E5 :0627:/	18.8/	18.8/	18.8/	18.8

.E6 :0628:/ 18.8

:*****

:COMMENT

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:jjl

:...END of MESSAGE...

[REDACTED]

From: [REDACTED]
Sent: Thursday, June 23, 2011 8:37 AM
To: Farhat, Jody S NWD02; [REDACTED]
Subject: FW: Senator Johanns e-Update: Questions Mount as Flooding Continues (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Master Manual again??

From: [Mike Johanns@Johanns.senate.gov](mailto:Mike.Johanns@Johanns.senate.gov) [[mailto:Mike Johanns@Johanns.senate.gov](mailto:Mike.Johanns@Johanns.senate.gov)]
Sent: Wednesday, June 22, 2011 6:16 PM
To: [REDACTED]@cox.net
Subject: Senator Johanns e-Update: Questions Mount as Flooding Continues

Senator Johanns e-Update

Senator Johanns e-Update
June 22, 2011

I participated in two meetings today with people who play important roles in the flood response in our state, the first of which was with Federal Emergency Management Agency (FEMA) Administrator Craig Fugate. Many of you have raised concerns about the National Flood Insurance Program (NFIP), which is administered by FEMA, and during the meeting I asked Administrator Fugate in person and in writing http://johanns.senate.gov/public/?p=PressReleases&ContentRecord_id=7f6abea7-be31-4832-b345-311cc2b80f7d to explain FEMA's rationale and how they will address these issues. We must do everything possible to make sure those who have suffered are treated fairly, and I look forward to his response.

Today I also met with Brigadier General John McMahon, Division Commander of the Army Corps of Engineers (USACE) to ask him about the series of decisions that led to the historic releases and corresponding flooding within the Missouri River basin. I am also looking into the Corps' operational manual to determine whether it constrained the Corps' ability to prepare for the flooding.

I understand that this is a busy time for both FEMA and USACE, and I appreciate both gentlemen taking time out to hear firsthand about concerns in Nebraska. As I've said before, their focus right now must be on managing the floodwaters and responding to the disaster, but the time will come for answers to valid, important questions. I will continue to stay heavily involved in the flooding situation and keep you updated on my efforts, as well as responses to the important questions being raised.

A copy of Senator Johanns' letter to Admin. Fugate can be found here
<http://johanns.senate.gov/public/?a=Files.Serve&File_id=0b01a014-8c1b-477a-99bb-217eecfcb860> .

Videos of flood-affected areas can be found at Senator Johanns' VIDEO HUB
<<http://johanns.senate.gov/public/?p=recent-flooding-video>> .

http://johanns.senate.gov/public/?a=Files.Serve&File_id=4627e57b-eaf7-445d-b30b-57f3c0403c6d
<<http://johanns.senate.gov/public/index.cfm?p=Subscribe>>

Click here <<http://johanns.senate.gov/public/?p=EmailSenatorJohanns>> to leave your remarks
for Sen. Johanns. Become a fan of Senator Johanns on Facebook
<<http://www.facebook.com/MikeJohanns>>
To unsubscribe, email unsubscribe@johanns.senate.gov.

Classification: UNCLASSIFIED
Caveats: NONE

[REDACTED]

From: [REDACTED] NWD02
Sent: Thursday, June 23, 2011 8:34 AM
To: [REDACTED] NWD02; [REDACTED] NWD; [REDACTED] NWD;
[REDACTED] NWO
Cc: Farhat, Jody S NWD02
Subject: RE: (UNCLASSIFIED)
Attachments: NWD Missouri Basin Update - 062311.pptx

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Missouri River Basin Stages

23 June 2011



US Army Corps of Engineers
BUILDING STRONG®

	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages	Projected Date **	Record Stage (Year)
A	Bismarck	16	18.9	150 kcfs 20.6	June 19	
B	Pierre	13	19.4	150 kcfs 18.7	June 7	
C	Yankton	20	25.4	150 kcfs n/a	June 14	
D	Sioux City	30	34.1	170 kcfs 35	June 15	44.28 (1952)
E	Decatur	35	39.0	175 kcfs 40	June 15	43.5 (1943)
F	Blair	26	32.5	175 kcfs 32	June 15	33.5 (1952)
G	Omaha	29	34.7	175 kcfs 34	June 16	40.2 (1952)
H	Nebraska City	18	27.8	200 kcfs 27	June 16	27.19 (1993)
I	Brownville	33	44.7	205 kcfs 43	June 16	44.3 (1993)
J	Rulo	17	26.9	210 kcfs 25.5	June 17	26.63 (2010)
K	St. Joseph	17	26.2	215 kcfs 27	June 17	32.07 (1993)
L	Atchison	22	28.9	215 kcfs 30	June 17	31.63 (1993)
M	Leavenworth	20	24.4	215 kcfs 27	June 17	35.34 (1993)

Missouri River Basin Stages

23 June 2011



	Station	Flood Stage	Current Stage	Likely Range of Highest* Flows/Stages		Projected Date **	Record Stage (Year)
N	Kansas City	32	27.2	220 kcfs 30	350 kcfs 39	June 18	48.87 (1993)
O	Sibley	22	25.4	220 kcfs 28	350 kcfs 33	June 18	40.6 (1952)
P	Napoleon	17	na	220 kcfs 25	350 kcfs 29	June 18	28.86 (2007)
Q	Waverly	20	25.1	230 kcfs 27	370 kcfs 31	June 18	31.15 (1993)
R	Miami	18	23.3	235 kcfs 26	370 kcfs 30	June 19	32.6 (1993)
S	Glasgow	25	na	250 kcfs 32	410 kcfs 37	June 19	39.5 (1993)
T	Boonville	21	22.3	260 kcfs 27	420 kcfs 33	June 19	37.1 (1993)
U	Jefferson City	23	21.4	260 kcfs 27	430 kcfs 35	June 19	38.3 (1993)
V	Chamais	17	17.5	290 kcfs 24	450 kcfs 29	June 19	33.3 (1993)
W	Gasconade	22	23.3	300 kcfs 30	470 kcfs 35	June 19	39.6 (1993)
X	Hermann	21	21.1	300 kcfs 27	470 kcfs 33	June 20	36.97 (1993)
Y	Washington	20	17.8	300 kcfs 23	470 kcfs 32	June 20	35.4 (1993)
Z	St. Charles	25	24.4	300 kcfs 28	470 kcfs 37	June 20	40.04 (1993)

[REDACTED]

From: Williamson, Eileen L NWO
Sent: Thursday, June 23, 2011 8:28 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; [REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/23/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

The press release from the other day has releases at Oahe going up to 160,000 is that still the case? Or is it just 150,000 for today?

-----Original Message-----

From: [REDACTED] NWD02
Sent: Thursday, June 23, 2011 8:19 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/23/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

Fort Peck Dam (MT)

6/22 Pool Elev: 2251.7 ft-msl

24-hr change: -0.1'

6/22 Ave Inflow: 46,000 cfs

6/22 Ave Release: 59,700 cfs

6/23 Scheduled Release: 60,000 cfs

Garrison Dam (ND)

6/22 Pool Elev: 1854.4 ft-msl

24-hr change: 0.1'

6/22 Ave Inflow: 169,000 cfs

6/22 Ave Release: 150,500 cfs

6/23 Scheduled Release: 150,000 cfs

Oahe Dam (SD)

6/22 Pool Elev: 1619.3 ft-msl

24-hr change: -0.0'

6/22 Ave Inflow: 178,000 cfs

6/22 Ave Release: 150,300 cfs

6/23 Scheduled Release: 150,000 cfs

Big Bend Dam (SD)

6/22 Pool Elev: 1421.5 ft-msl

24-hr change: 0.5'

6/22 Ave Inflow: 179,000 cfs

6/22 Ave Release: 164,600 cfs

6/23 Scheduled Release: 165,000 cfs

Fort Randall Dam (SD)

6/22 Pool Elev: 1369.1 ft-msl

24-hr change: 1.1'

6/22 Ave Inflow: 198,000 cfs

6/22 Ave Release: 138,300 cfs

6/23 Scheduled Release: 138,000 cfs

Gavins Point Dam (NE-SD)

6/22 Pool Elev: 1208.3 ft-msl

24-hr change: 0.2'

6/22 Ave Inflow: 157,000 cfs

6/22 Ave Release: 154,300 cfs

6/23 Scheduled Release: 160,000 cfs

Classification: UNCLASSIFIED

Caveats: NONE

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: [REDACTED] NWD02
Sent: Thursday, June 23, 2011 8:19 AM
To: [REDACTED] NWD02; CENWO-EOC NWO; Williamson, Eileen L NWO; [REDACTED]
[REDACTED] MVR; [REDACTED] NWO
Cc: [REDACTED] NWO; [REDACTED] NWO; [REDACTED] NWO; Farhat, Jody S
NWD02; [REDACTED] NWO
Subject: RE: Mainstem data for NWO sitrep 6/23/11 (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Notes for data below: pool elevation is the midnight value; average inflows and average releases are average daily values; scheduled releases are the release from the project at the end of the day per yesterday's project orders.

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6/22 Ave Inflow: 157,000 cfs

6/22 Ave Release: 154,300 cfs

6/23 Scheduled Release: 160,000 cfs

Classification: UNCLASSIFIED

Caveats: NONE

[REDACTED]

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 7:55 AM
To: Farhat, Jody S NWD02
Subject: Yellowstone Forecast

ZCZC MKCRV FYEL DEF
TTAA00 KKRF DDHMM
RVFYEL

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 1250Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS YELLOWSTONE

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ***** PRELIMINARY FORECAST *****

:
: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

: Please note ... Crest forecasts provided are based on 14 days of
: forecast temperatures and should not be assumed to be the absolute
: crests for the snowmelt season.

RIVER/STATION	FS	TDY	F O R E C A S T
YELLOWSTONE RIVER			
LIVINGSTON MT 5S	9.0	8.8	CREST NEAR 9.6 FT 06/24 PM 2nd CREST NEAR 9.5 FT 06/25 AM CLRKS FK YELOWSTNE
RIVER			
BELFRY MT	7.5	7.2	CREST NEAR 7.6 FT 06/24 AM 2nd CREST NEAR 7.0 FT 06/25 AM

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: LIVINGSTON MT 5S - YELLOWSTONE RIVER HSA - BYZ
: FLOOD STAGE 9.0 FCST ISSUANCE STAGE 8.0

: LATEST STAGE 8.8 FT AT 1145Z ON 0623

.AR : CREST : LIVM8 20110624 Z DC201106231250/DH18/HGIFFX 9.6 .AR : CREST : LIVM8 20110625 Z
DC201106231250/DH12/HGIFFX 9.5

: RISE ABOVE FLOOD STAGE ON 06/23/2011 AROUND 19Z

: FALL BELOW FLOOD STAGE ON 06/26/2011 AROUND 20Z

.ER LIVM8 20110623 Z DC201106231250/DH18/HGIFFX/DIH6

:QPF FCST	12Z	18Z	0Z	6Z
.E1 :0623:	/	9.0/	9.1/	9.3
.E2 :0624:/	9.5/	9.6/	9.5/	9.4
.E3 :0625:/	9.5/	9.5/	9.3/	9.2

.E4 :0626:/	9.1/	9.1/	8.9/	8.8
.E5 :0627:/	8.8/	8.8/	8.7/	8.7
.E6 :0628:/	8.7			

.ER LIVM8 20110623 Z DC201106231250/DH18/QRIF/DIH6
:QPF FCST 12Z 18Z 0Z 6Z
.E1 :0623:/ / 26.27/ 27.28/ 28.37
.E2 :0624:/ 29.91/ 30.64/ 30.01/ 29.67
.E3 :0625:/ 30.08/ 29.93/ 28.81/ 27.88
.E4 :0626:/ 27.31/ 26.79/ 25.70/ 25.16
.E5 :0627:/ 25.36/ 25.12/ 24.46/ 24.15
.E6 :0628:/ 24.45

:
:BELFRY MT - CLRS FK YELLOWSTONE RIVER HSA - BYZ
:FLOOD STAGE 7.5 FCST ISSUANCE STAGE 6.5
:

:LATEST STAGE 7.2 FT AT 1200Z ON 0623

.AR : CREST : BFYM8 20110624 Z DC201106231250/DH12/HGIFFX 7.6 .AR : CREST : BFYM8 20110625 Z
DC201106231250/DH12/HGIFFX 7.0

: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 11Z

: FALL BELOW FLOOD STAGE ON 06/24/2011 AROUND 15Z

.ER BFYM8	20110623 Z DC201106231250/DH18/HGIFF/DIH6
:QPF FCST	12Z 18Z 0Z 6Z
.E1 :0623:/	/ 6.9/ 6.6/ 7.1
.E2 :0624:/	7.6/ 7.4/ 7.0/ 7.0
.E3 :0625:/	7.0/ 6.7/ 6.4/ 6.3
.E4 :0626:/	6.4/ 6.2/ 6.0/ 6.0
.E5 :0627:/	6.2/ 6.0/ 5.8/ 5.9
.E6 :0628:/	6.1

.ER BFYM8	20110623 Z DC201106231250/DH18/QRIF/DIH6
:QPF FCST	12Z 18Z 0Z 6Z
.E1 :0623:/	/ 7.77/ 7.15/ 8.28
.E2 :0624:/	9.43/ 9.02/ 8.03/ 7.94
.E3 :0625:/	8.04/ 7.37/ 6.71/ 6.50
.E4 :0626:/	6.61/ 6.17/ 5.73/ 5.81
.E5 :0627:/	6.08/ 5.71/ 5.33/ 5.58
.E6 :0628:/	5.99

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:COMMENT

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:...END of MESSAGE...

There was a breach on the eastern side of the Big Tarkio and on a private levee. Water infrastructure is protected at this time. A 4 foot earthen levee is being constructed to protect the water treatment plant in Craig. A levee breach has occurred along Cannon Creek Levee. USACE is allowing flow into a nature reserve to relieve pressure; no communities affected. Holt County Levee #9 is expected to overtop this weekend. The levee protects farmland only; no communities will be affected.

In Atchison County, Levee 550 at mile marker 535.5 (near US-136) is overtopping along a 20-30 foot span. USACE and the County Emergency Management Department predict the levee will fail at any time.

In Platte County, sandbagging operations are continuing for levees 408 and 400 Levees. The levees are expected to overtop this weekend:

In Buchanan County, inmates have sandbagged around the Lewis and Clark Lake. USACE has completed two relief wells at Lake Contrary and will drill four additional relief wells. The county is working on evacuation plans. The levee around the airport has been reinforced. There are two shelters open; one in Atchison County (Methodist Church in Rock Port) with no occupants, and one in Holt County (Christian Church in Mound City) with two occupants. There are 38 roads statewide that are closed due to flooding.

Iowa:

Gavins Point:

Current releases of 155,000 CFS and are projected to increase to approximately 160,000 CFS today. These high releases are expected to continue through at least mid August. This will result in an increase in river stages: Sioux City, IA from 0.7 to 1 foot; Omaha to Rulo, NE to 0.3 to 0.4 of a foot; St. Joseph, MO roughly 0.6 foot; Kansas City, the rise will be roughly 0.7 foot.

Rulo (Nebraska) - The river went above record flood stage yesterday morning and is expected to crest at 26.8' early tomorrow morning and maintain near the record levels through early next week.

Historically, Federal levees at this location are nearly overtopped at 27'. There is one shelter open in Missouri Valley (Harrison County) and seven shelters on stand-by. There are several road closures that remain in effect.

Significant National Weather:

Midwest: (There is no discussion on the Missouri River area)

West: A front moving ashore will produce precipitation from the Pacific Northwest to the Northern Rockies and as far south as Northern California. Thunderstorms and severe thunderstorms are possible over the Northern Rockies (Montana) this afternoon. Under high pressure the rest of the region will be generally dry.

v/r

Classification: UNCLASSIFIED

Caveats: NONE



FEMA

National Situation Report

As of 5:30 a.m. (EDT) Thursday, June 23, 2011

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Significant National Weather

West:

A front moving ashore will produce precipitation from the Pacific Northwest to the Northern Rockies and as far south as Northern California. Thunderstorms and severe thunderstorms are possible over the Northern Rockies this afternoon. Under high pressure the rest of the region will be generally dry. The Southwest will be hot (over 100F). The heat, low relative humidity and long term drought will result in critical fire weather in southern Nevada, southern Utah and northern Arizona.

Midwest:

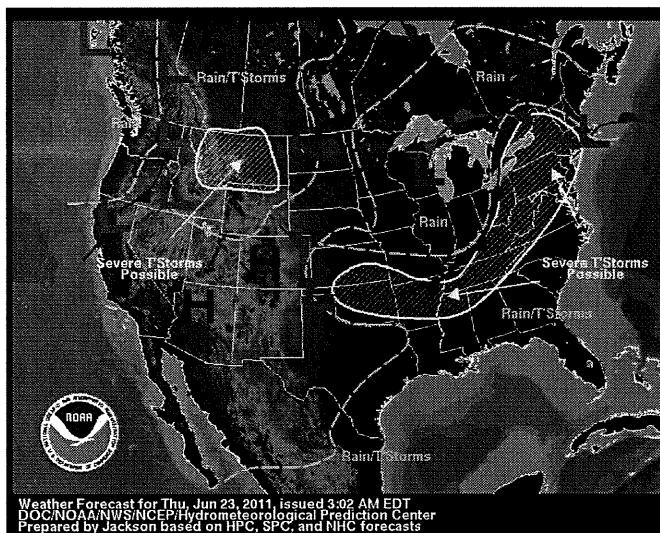
A deep low pressure system over the Great Lakes and an associated frontal system will produce precipitation across the eastern third of the country. Severe thunderstorms are forecast along the front from Southern New England to the Southern Plains. On the backside of the low expect rain over the Northern Mississippi Valley.

South:

The system discussed above will produce rain showers, thunderstorms and severe thunderstorms from Texas across the Lower Mississippi Valley and Southeast. The Southeast will be hot with many areas in excess of 100 degrees and a heat advisory is in effect for coastal Georgia and South Carolina. Low relative humidity and long term drought will produce high fire danger across the Southern Plains.

Northeast:

The warm front extending from the low over the Great Lakes will produce rain across much of New England. (NOAA, NWS and various media sources)



Missouri River Basin Flooding Summary

The combination of spring snowmelt and recent rainfall events has resulted in unseasonable high runoff at many locations throughout the Missouri River Basin. The weather forecast during the next 1 to 3 days shows a potential for over 1.3 inches of rain near the northwestern area of Missouri and southwest region of Iowa which may drain into the Missouri River Basin.

Nebraska:

The Missouri River at Rulo went above record flood stage this morning and is currently at 26.65 feet. This location is expected to crest at 26.8 feet early morning on June 23 and maintain near record levels through early next week. Historically, Federal levees at this location are nearly overtopped at 27 feet.

Missouri:

Over the past several days, there have been numerous levee breaches due to high reservoir and dam releases combined with heavy rainfall. During the evening hours of June 21, two agricultural levee breaches were reported by the Missouri Information Analysis Center (MIAC). The breaches were north of Big Lake near the intersection of M-111 and M-118. Local emergency managers and the National Guard went door-to-door informing residences in the town of Bigelow (pop. 35) of possible imminent flooding due to the breaches. There has been no additional reporting on this event since Tuesday night.

In Holt County, the Towns of Bigelow and Fortescue have evacuated. Corning is flooded with 8 feet of water due to a breach of the Mill Creek Levee located at the mouth of Mill Creek and Missouri River; evacuation is complete; approximately 20 homes (75 persons) are affected. There was a breach on the eastern side of the Big Tarkio and on a private levee. Water infrastructure is protected at this time. A 4 foot earthen levee is being constructed to protect the water treatment plant in Craig. A levee breach has occurred along Cannon Creek Levee. USACE is allowing flow into a nature reserve to relieve pressure; no communities affected. Holt County Levee #9 is expected to overtop this weekend. The levee protects farmland only; no communities will be affected.

In Atchison County, Levee 550 at mile marker 535.5 (near US-136) is overtopping along a 20-30 foot span. USACE and the County Emergency Management Department predict the levee will fail at any time.

In Platte County, sandbagging operations are continuing for levees 408 and 400 Levees. The levees are expected to overtop this weekend:

In Buchanan County, inmates have sandbagged around the Lewis and Clark Lake. USACE has completed two relief wells at Lake Contrary and will drill four additional relief wells. The county is working on evacuation plans. The levee around the airport has been reinforced.

There are two shelters open; one in Atchison County (Methodist Church in Rock Port) with no occupants, and one in Holt County (Christian Church in Mound City) with two occupants. There are 38 roads statewide that are closed due to flooding.

Iowa:

Gavins Point:

Current releases of 155,000 CFS and are projected to increase to approximately 160,000 CFS today. These high releases are expected to continue through at least mid August. This will result in an increase in river stages: Sioux City, IA from 0.7 to 1 foot; Omaha to Rulo, NE to 0.3 to 0.4 of a foot; St. Joseph, MO roughly 0.6 foot; Kansas City, the rise will be roughly 0.7 foot.

Rulo (Nebraska) - The river went above record flood stage yesterday morning and is expected to crest at 26.8' early tomorrow morning and maintain near the record levels through early next week.

Historically, Federal levees at this location are nearly overtopped at 27'. There is one shelter open in Missouri Valley (Harrison County) and seven shelters on stand-by. There are several road closures that remain in effect.

Federal and State Response

FEMA Region VII

The RRCC at Level III (Monitoring); RWC is operational 24/7. Region VII personnel/teams are deployed as follows: Nebraska: State Liaison team consisting of 13 persons have deployed to the SEOC (Planning, Log, Ops, GIS). Kansas: 1 State Liaison Officer (SLO) and 1 Planner. Missouri: 1 SLO and 1 support staff person. Iowa: 1 SLO. Regional IMAT Team (Type II) is deployed to Joplin, MO. IA SEOC remains at Level II (limited staff in the EOC). KS EOC remains at a Watch Level. NE SEOC remains at Level III (Full Activation – Mon-Fri; Duty Officer only on Sat/Sun). MO SEOC remains at Level II (Partial Activation).

Souris River Flooding – Minot, ND

Current Situation

Increased releases from Canadian reservoirs flowing into Lake Darling has resulted in severe flooding in Minot (Ward County). Lake Darling releases will increase to maximum 20,300 cfs by June 27; will stay at this flow rate for 5 days. Levees were built for previous crest of 9,500 cfs; significant failure of Minot levee system is likely. Sherwood water flows expected to begin affecting Lake Darling levels in the next 24 hours. The river is not expected to drop below 8,000 cfs until after July 11.

Reconstruction of levees/recovery not expected until July 12-15, when flow recede to 3,000-5,000 cfs. Downstream communities of Logan and Sawyer will see record-topping river levels due to water from backside of Minot dikes.

Minot, ND

Several levees overtopping and 10,000-12,000 residents in the original evacuation zones 1–9 were instructed to evacuate immediately after flood sirens activated yesterday morning. The City of Burlington (population 1,060) in Ward County also mandatorily evacuated residents. The Trinity Nursing Home was evacuated and patients were relocated to other facilities.

There are 2 shelters (1 in Minot, 1 in Burlington) open with 52 occupants in Minot/0 occupants in Burlington; 3 additional shelters are identified and on stand-by. Evacuated residents will not be allowed to return home until the Souris River falls below high risk levels – estimated time frame is in excess of 30 days. The Broadway Bridge may close; will cut off north side of city from south. Risk to Minot water system is due to flooding of source wells and water treatment plant; these infrastructure sites are being protected.

State/Local Actions

The ND EOC is activated 24/7. ND has staged cots and blankets for 2,500 people in Minot; water for 1,000 people for 3 days staged in Bismarck, ND (1 ½ hrs from Minot). The State has moved sandbags, Hesco barriers, trap bags and water to Minot. Under EMAC, trap-bags and assembly equipment were delivered from Louisiana. There were no requests for commodities from FEMA.

Federal Actions

The National IMAT Red is on Alert. FEMA personnel is supporting State EOC. Region VIII RRCC is at Level III; Planning/Ops is working with JFO in ND. Four additional airboats are staged in ND – 2 in Minot, 2 in Burlington. Denver MERS is providing an IRV to Minot. Disaster Emergency Communications (DEC) team in Minot is coordinating communications with State radio and assisting in video streaming of the Mouse River. DOD is providing Search & Rescue and Casualty Evacuation air support helicopters.

National Fire Activity

Wednesday, June 22, 2011:

- National Preparedness Level: 3
- Initial attack activity: LIGHT (170 new fires)
- New Large Fires: 10
- Large Fires Contained: 9
- Uncontained Large Fires: 58
- Type 1 IMT Committed: 6
- Type 2 IMT Committed: 14
- States affected: AZ, NM, GA, NC, FL, OK, AR, TX, CA, AK, SC, MS, LA, and CO. (NIFC)

Wildfires

Arizona and New Mexico

Wallow Fire – FEMA 2915-FM-AZ (Apache, Navajo, Graham & Greenlee Counties); FEMA-2917-FM-NM (Catron County)

The fire has consumed 529,825 acres and is 61% contained. Mandatory evacuations remain in effect in Blue River, AZ. Evacuation was lifted for Luna, NM. A pre-evacuation alert remains in effect in Apache County, AZ for Greens Peak, Hidden Meadows Lodge and the surrounding areas. Multiple highways and road closures in the fire area; US -180 is open. Two shelters are open with 32 occupants.

Monument Fire – FEMA-2919-FM-AZ (Cochise County, AZ)

The fire is located within 5 miles of Sierra Vista (Pop. 3,700). On June 21, the Governor deployed the AZ National Guard to assist. The fire has consumed 28,230 acres, 59% containment. Destroyed: 61 residences; 4 businesses Damaged: 7 residences Threatened: 1,500 residences There are 2 shelters open with 32 occupants.

Alaska

Hasting Fire

The fire is located on State land burning approximately 15 miles northwest of Fairbanks. The fire has consumed 22,819 acres with 61% containment; expected containment unknown. A Temporary Flight Restriction (TFR) remains in place for pilots operating in the Fairbanks in the airspace surrounding the Hastings Fire.

Georgia

Honey Prairie Complex Fires – FEMA-2920-FM-GA (Racepond, Honey Prairie, Paxton Road and Durdin Prairie Fires)

Fires are burning near the Okefenokee National Wildlife Refuge, 5 miles NE of Fargo, GA. The fire has consumed 266,320 acres with 60% containment.

Sweat Farm Again Fire – FEMA-2921-FM-GA

19,725 acres burned, with 35% containment.

Fire Management Assistance Grant (FMAG)

No new activity. (FEMA HQ, NIFC, InciWeb)

Earthquake Activity

There was no significant activity in the U.S. or its territories.

On June 22, 2011 at 5:50 p.m. EDT, a magnitude 6.7 earthquake occurred 325 miles north-northeast of Tokyo, Japan at a depth of 19.9 miles. The West Coast and Alaska Tsunami Warning Center (WCATWC) stated that a tsunami was not expected along the California, Oregon, Washington, British Columbia, or Alaska coast; no tsunami warning, watch or advisory is in effect for these areas. (*USGS*)

Tropical Activity

Atlantic / Caribbean / Gulf of Mexico

No activity expected within the next 48 hours.

Eastern / Central Pacific

Tropical cyclone formation is not expected during the next 48 hours.

Western / South Pacific:

No tropical cyclone activity affecting U.S. territories. (*NOAA, NWS, NHC, CPHC JTWC*)

Declaration Activity

- FEMA-1969-DR-NC; Amendment # 3, effective June 22, 2011, adds Alamance County for Individual Assistance.
- FEMA-1975-DR-AR; Amendment # 9, effective June 22, 2011, adds six counties for Individual Assistance (already designated for Public Assistance, including direct Federal assistance), and Desha County for Individual Assistance. (*FEMA HQ*)

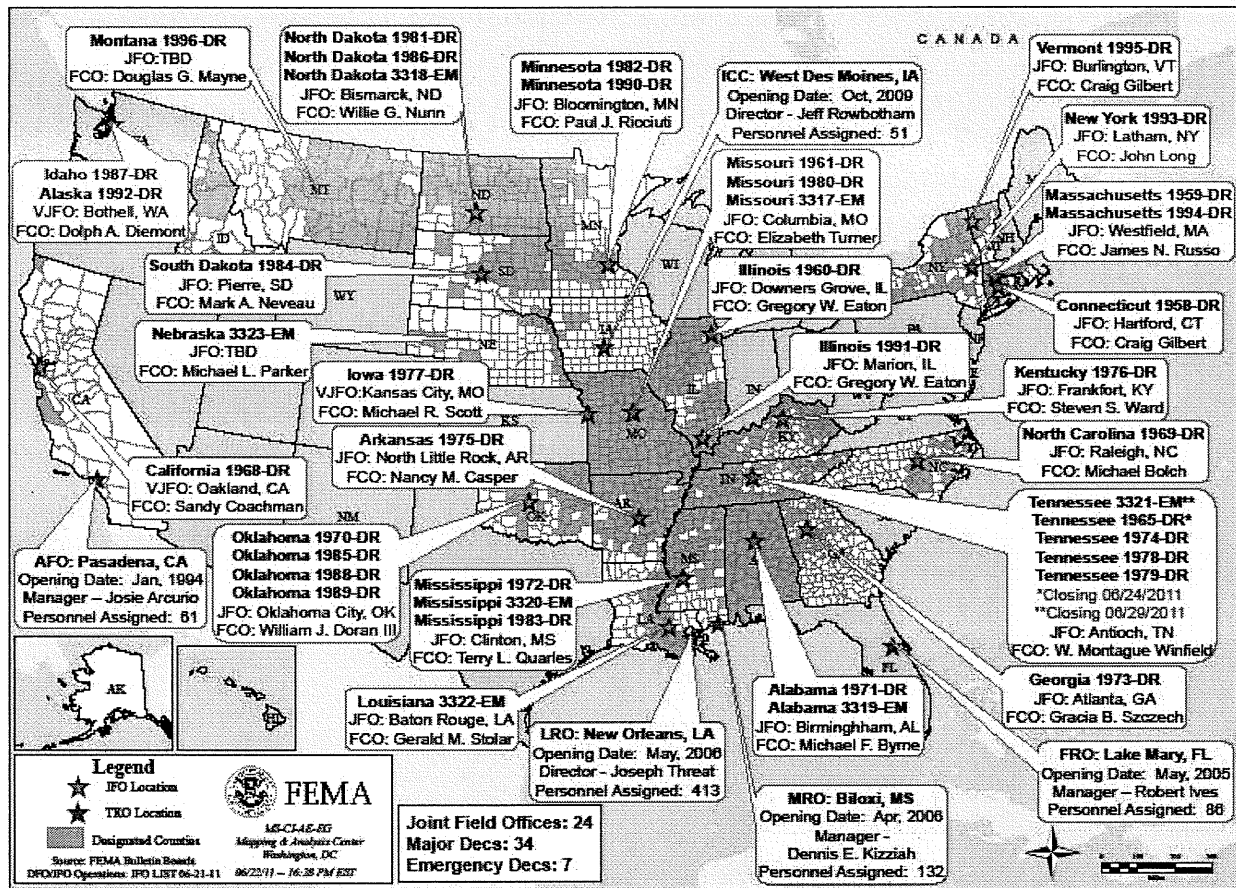
Joint Preliminary Damage Assessment Activity

				Number of Counties/Tribes			(Estimated) Start/End Date
Region	State	Event	IA/ PA	Requested	Ongoing	Complete	
I	ME	Severe Storms, Straight-line Winds, & Tornadoes	PA	1	1	0	Began 6/21 End 6/24
II	NY	Spring Flooding 4/26	IA	2	2	0	Began 6/14 End TBD
			PA	8	6	2	
IV	KY	Flash Flooding	6	0	0	0	Begin 6/20 End TBD
IV	KY	Flash Flooding	6	0	0	0	Begin 6/20 End TBD
IV	MS	Severe Weather 5/3	PA	14	7	7	Began 6/10 End TBD
V	MI	Severe Storms 5/29	IA	1	0	0	Began 6/17 End TBD
			PA	1	0	0	
VII	KS	Severe Storms, Tornadoes & Flooding 5/19	PA	29	19	10	Begin 6/20 End TBD
VII	IA	Flooding 5/25	PA	6	0	6	Began 6/16 End TBD
VIII	MT	Flooding	IA	15 counties; 1 Tribe	0	0	Begin 6/21 End 6/25
VIII	MT	Flooding	PA	15 counties; 4 Tribes	0	0	Begin 6/21 End 6/25
VIII	ND	Flooding	IA	4	1	3	Began 6/18 End 7/1
VIII	SD	Flooding	IA	7	7	0	Began 6/27 End 6/29
VIII	SD	Flooding	PA	6	4	2	Begin 6/21 End 6/24
VIII	WY	Flooding	PA	15	0	0	Began 6/24 End 6/29

On-Call and Deployed Teams		
Teams	Status	Location
National IMAT Red	Activated	Deployed to MS (On alert for deployment to Bismarck, ND)
National IMAT White	Not Activated	
National IMAT Blue	Activated	Deployed to AL
Regional Teams		
Region I IMAT	Activated	Deployed to MA
Region II IMAT	Not Activated	
Region III IMAT	Not Activated	Reconstituting
Region IV IMAT	Activated	Type II deployed to TN and AL
Region V IMAT	Not Activated	
Region VI IMAT	Activated	Type II supporting 1975-DR-AR Type III Supporting 1971-DR-TX Type III deployed to OK
Region VII IMAT	Activated	Type II 1980-DR-MO Type II deployed to NE
Region VIII IMAT	Activated	Type III supporting DR-1984-SD Type III supporting DR-1981/1986 ND Type II deployed to MT
Region IX IMAT	Not Activated	
Region X IMAT	Not Activated	Type II supporting DR-1992-AK
Other FEMA National Teams		
Hurricane Liaison Team	Activated	
NRCC	Not Activated	
National Watch Center	24/7	
DEST	Not Activated	

Activation Levels		
Region	RRCC	Watch
Region I	Watch/Steady State	Maynard MOC (24/7)
Region II	Watch/Steady State	24/7
Region III	Watch/Steady State	24/7
Region IV	Watch/Steady State	24/7
Region V	Watch/Steady State	24/7
Region VI	Watch/Steady State	Denton MOC (24/7)
Region VII	Level III	24/7
Region VIII	Level III	Denver MOC (24/7)
Region IX	Watch/Steady State	24/7
Region X	Watch/Steady State	Bothell MOC (24/7)

Open Field Offices & Designated Counties as of 06/23/2011



MapID: Ba19105fca2052211611hgwed

[REDACTED]

From: McMahon, John R BG NWD
Sent: Thursday, June 23, 2011 5:18 AM
To: Anderson, G Witt NWD; [REDACTED] NWD; Farhat, Jody S NWD02; Blechinger, Erik T NWO; [REDACTED] NWD
Cc: Ruch, Robert J COL NWO; Hofmann, Anthony J COL NWK
Subject: Fw: Master Manual
Attachments: Draft 05-06 AOP Info lq.pdf; ATT1143450.htm

Importance: High

Team:

Would be interested in some feedback on this, as I know it's a hot topic of discussion. We have some time, too. Thanks.
Vr/John McMahon

From: Tom & Karla Waters <waters4@ix.netcom.com>
To: McMahon, John R BG NWD
Cc: Farhat, Jody S NWD02
Sent: Wed Jun 22 20:43:00 2011
Subject: Master Manual

Dear General McMahon:

On Monday in Jefferson City, I briefly told you about a time in the past when the Corps of Engineers made changes to the Master Manual without a full blown review and update process. Tonight, I went back and found the attached information.

In the fall of 2005 during the 2006 AOP Public Hearings, the Corps used the AOP Hearings to also take comments on a supplement to the Master Manual. See the attached Corps Document signed by then Commander General Gregg Martin.

I believe the Corps of Engineers Northwestern Division should use the same process to make quick supplemental changes to the Master Manual which will provide more available storage for Flood Control in the reservoir system.

Please review the attached document and discuss it with your staff. The need for additional flood control storage is evident with today's flooding along the Missouri River. The Basin cannot afford to go through another 14-year multimillion dollar study. We need additional storage now, beginning with next year's AOP. I hope you will consider this quick option to make the changes the entire basin needs to better protect lives and property.

Thanks,
Tom



DEPARTMENT OF THE ARMY
NORTHWESTERN DIVISION, CORPS OF ENGINEERS
12565 WEST CENTER ROAD
OMAHA, NEBRASKA 68144-3869

REPLY TO
ATTENTION OF:

October 2005

This Draft Annual Operating Plan (AOP) presents pertinent information regarding water management in the Missouri River Mainstem Reservoir System (System) for the remainder of 2005 through February 2007. The information provided in this Draft AOP is based upon water management guidelines designed to meet the reservoir regulation objectives of the existing Missouri River Master Water Control Manual (Master Manual). This AOP also includes the implementation of a spring pulse, as required by the U.S. Fish and Wildlife Service's (USFWS) 2003 Amended Biological Opinion on the Operation of the System. The water control plan (WCP) in the Master Manual currently does not contain any technical criteria for a spring pulse. Therefore, if the final Corps of Engineers' (Corps) decision is to include spring pulse elements in the 2006 System regulation, the Master Manual will be supplemented prior to implementation of a spring pulse. A full description of the proposed spring pulse technical criteria, including its potential flexibility, has been provided as a separate document accompanying this Draft AOP.

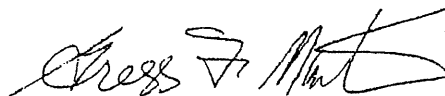
Comments on the spring pulse technical criteria and its proposed flexibility will be accepted, along with any comments on this Draft AOP. All comments will be fully considered prior to the final decision on the AOP and the supplement to the Master Manual for the spring pulse. The Corps will also prepare appropriate National Environmental Policy Act (NEPA) documentation.

The guidelines included in the existing Master Manual and the proposed spring pulse WCP technical criteria are applied to computer simulations of System regulation assuming five statistically derived inflow scenarios based on an analysis of water supply records from 1898 to 1997. This approach provides a good range of water management simulations for dry, average, and wet conditions. Computer simulation data with and without the spring pulse components are also presented to allow comparison. The AOP information provides a framework for the development of detailed monthly, weekly, and daily regulation schedules for the System's six individual dams during the upcoming year to serve its Congressionally authorized project purposes. System water management is provided by my staff at the Missouri River Basin Water Management Division, Northwestern Division, U.S. Army Corps of Engineers, located in Omaha, Nebraska.

Two additional documents will also be available by mid-2006 entitled, "System Description and Operation" and "Summary of Actual 2005 Regulation." To receive copies of those documents, you may contact the Missouri River Basin Water Management Division at 12565 West Center Road, Omaha, Nebraska 68144-3869, phone (402) 697-2676. Both reports will also be available at the "Reports and Publications" link on our web site at: www.nwd-mr.usace.army.mil/rcc.

Eight public meetings to discuss both this Draft AOP and the supplement to the Master Manual are scheduled as follows: November 14 in Omaha and Nebraska City, Nebraska; November 15 in Kansas City, Missouri; November 16 in St Louis and Jefferson City, Missouri; November 17 in Pierre, South Dakota and Bismarck, North Dakota; and November 18 in Glasgow, Montana. We ask that any comments be provided by December 1, 2005. The Final AOP is scheduled for publication in December 2005. Copies of the written comments and a report summarizing the comments received at the eight public meetings will be available upon request.

I thank you for your interest in the regulation of the System and look forward to your participation in this process.

A handwritten signature in black ink, appearing to read "Gregg F. Martin". The signature is stylized with a large, sweeping "G" and a distinct "M".

Gregg F. Martin
Colonel (Promotable), US Army
Division Engineer

Draft Spring Pulse Water Control Plan Technical Criteria

In December 2003, the U.S. Fish and Wildlife Service (USFWS) presented the Corps of Engineers (Corps) with its Amended Biological Opinion on the Operation of the Missouri River Mainstem System (System), Operation and Maintenance of the Missouri River Bank Stabilization and Navigation Channel, and Operation of the Kansas River Reservoir System (2003 Amended BiOp). That document presented the USFWS' opinion that the operation of the System would jeopardize the continued existence of the endangered interior least tern, threatened piping plover, and the endangered pallid sturgeon. The USFWS provided a Reasonable and Prudent Alternative (RPA) to avoid jeopardy to these species. For the endangered pallid sturgeon, the RPA included a provision that the Corps should develop a plan to implement a 'spring pulse' from Gavins Point Dam. The Missouri River Master Water Control Manual (Master Manual), which presents the water control plan (WCP) and operational objectives for the integrated regulation of the System, currently does not contain any technical criteria for a spring pulse.

The proposed spring pulse technical criteria are described below (Tables 1 & 2), including potential WCP flexibility (Table 3). Comments on these criteria will be accepted along with any comments on the Draft 2005-2006 Annual Operating Plan (AOP). All of those comments will be fully considered and integrated, if appropriate, into a supplement to the Master Manual and the Final 2005-2006 AOP. The Corps will also conduct Section 106 consultation, as provided for in the existing Programmatic Agreement and Government-to-Government consultations with the basin Tribes on the Master Manual supplement.

The spring pulse plan was developed based on the "Initial Starting Point" (ISP) presented in the 2003 Amended BiOp and input from the spring pulse Plenary Group and its technical working groups. These groups were involved in the recent spring pulse facilitated Tribal, State, and stakeholder process (spring pulse facilitated process) conducted by CDR Associates, a contractor for the U.S. Institute for Environmental Conflict Resolution. The purpose of this facilitated process was to develop a consensus approach on a Gavins Point Dam spring pulse plan. While the facilitated process did not develop a consensus approach, the Corps has utilized technical information from that process to develop the proposed WCP technical criteria for the spring pulse, which is set forth below.

TABLE 1
WCP TECHNICAL CRITERIA FOR SPRING PULSES
FROM GAVINS POINT DAM

Criteria Applicable to Both the March and May Spring Pulses

Flood Control Constraints	No change from current levels.
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Criteria Applicable to the March Spring Pulse

Drought Preclude	Initially 36.5 MAF or below measured on March 1 until this criteria results in a March spring pulse. Thereafter, 40.0 MAF or below measured on March 1.
Drought Proration of Pulse Magnitude*	None, 5 kcfs added to navigation releases, but no greater than 35 kcfs.
Initiation of Pulse	Extend the stepped System release increases that precede the beginning of the navigation season.
Rate of Rise before Peak	Approximately 5 kcfs for 1 day.
Duration of Peak	Two days.
Rate of Fall after Peak	Drop over 5 days to navigation target release.

Criteria Applicable to Time Period Between the Bimodal Pulses

Release	Existing Master Manual Criteria.
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Criteria Applicable to the May Spring Pulse

Drought Preclude	Initially 36.5 MAF or below measured on May 1 until this criteria results in a May spring pulse. Thereafter, 40.0 MAF or below measured on May 1.
Proration of Pulse Magnitude Based On System Storage*	Prorated from 16 kcfs based on a May 1 System Storage check; 100% at 54.5 MAF; straight line interpolation to 75% at 40.0 MAF.

Criteria Applicable to the May Spring Pulse (Cont'd)

Proration of Pulse Magnitude Based On Projected Runoff*	After the proration of the spring pulse magnitude for System Storage, the resultant magnitude would be further adjusted either up or down based on the May CY runoff forecast; 100% for median; straight-line interpolation to 125% at upper quartile runoff; 125% for runoff above upper quartile; straight-line interpolation to 75% at lower quartile runoff; 75% for runoff below lower quartile.
Initiation of Pulse	Between May 1 to May 19, depending on Missouri River water temperature immediately below Gavins Point Dam. If possible, pulse will be initiated after the second daily occurrence of a 16 degree Celsius water temperature; however, the decision will be informed by the potential for 'take' of threatened and endangered bird species.
Rate of Rise before Peak	Approximately 6 kcfs per day.
Duration of Peak	Two days.
Fall Rate after Peak	Approximately 30% drop over 2 days, followed by a proportional reduction in releases back to the existing Master Manual Criteria over an 8-day period.

* Spring pulse magnitudes will be determined by taking the difference between pre-pulse Gavins Point releases and the peak pulse Missouri River flows measured just downstream of the mouth of the James River.

During the spring pulse facilitated process, many downstream stakeholders indicated that there should be downstream spring pulse flow limits that would decrease the chance of additional interior drainage flooding of agricultural land due to a spring pulse. They indicated that these downstream flow limits should be no higher than the existing downstream flood control constraints. The spring pulse downstream flow limits for this plan at Omaha, Nebraska City, and Kansas City, shown in Table 2, are equivalent to the minimum values (most protective) of the existing flood control constraints at those locations. Many spring pulse facilitated process participants also indicated that the Corps should use forecasted precipitation in its river flow forecast models to further protect downstream agricultural land from potential negative impacts associated with the spring pulse. Therefore, the Corps will include forecasted precipitation in the daily Missouri River forecast during the spring pulse implementation time period. If that

forecast indicates that these flow limits will be exceeded during the spring pulse time period, the Gavins Point release will be reduced accordingly to avoid exceeding those downstream flow limits.

TABLE 2
DOWNSTREAM SPRING PULSE FLOW LIMITS

<u>Location</u>	<u>Flow Limit (kcfs)</u>
Omaha	41
Nebraska City	47
Kansas City	71

TABLE 3
WCP FLEXIBILITY FOR SPRING PULSES

Flexibility Applicable to Both the March and May Spring Pulses

Downstream Flow Limits	Could be increased to no more than the "minimally increased" flood control targets identified by the Corps during the spring pulse facilitated process. The associated downstream flow limits would be 49 kcfs at Omaha, 55 kcfs at Nebraska City and 75 kcfs at Kansas City.
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Flexibility Applicable to the March Spring Pulse

Duration of Peak	Could be increased to no more than 5 days.
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Flexibility Applicable to the May Spring Pulse

Rate of Rise before Peak	Could be decreased to no less than 4 kcfs per day and increased to no more than 8 kcfs per day.
Duration of Peak	Could be increased to no more than 5 days.
Rate of Fall after Peak	While maintaining the approximately 30% drop over 2 days, the tail of the spring pulse hydrograph could be extended to 14 days.
Use of James River Target	When not required as a drought conservation measure, the magnitude of the spring rise could be measured at Gavins Point Dam rather than below the confluence with the James River.

The WCP flexibility, presented in Table 3, is designed to facilitate the adaptive management process. It will not be exercised until it is determined that this flexibility is necessary to meet the life history needs of the pallid sturgeon. In addition to comments received on this WCP technical criteria and the 2005-2006 AOP, the Corps will also participate with States, Tribes, and stakeholders in forums conducted by the U.S. Institute for Conflict Resolution related to the spring pulse issue. This includes the current Spring Pulse Plenary and its technical working groups or their eventual successors within the Missouri River Recovery Implementation Committee (MRRIC). The States, Tribes, stakeholders, and general public will be afforded ample opportunity to comment on the WCP flexibility prior to implementation.

The National Environmental Policy Act (NEPA) process was followed for the recent revision of the Missouri River Master Water Control Manual (Master Manual). That NEPA process culminated in a Record of Decision dated April 19, 2004. The Missouri River Master Water Control Manual Revised Draft Environmental Impact Statement published in August 2001 and the Master Manual Final Environmental Impact Statement, published in March 2004, presented impacts to key river uses and resources associated with a spring pulse operation for several alternatives. An Environmental Assessment will be completed prior to the supplementation of the Master Manual to determine if impacts associated with the implementation of the spring pulse WCP technical criteria, including those associated with the WCP flexibility described above, are within the range of impacts analyzed for those alternatives, or whether an Environmental Impact Statement should be prepared for these changes.

From: ldm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 2:45 AM
To: Farhat, Jody S NWD02
Subject: Upper Dakota Tribs Forecast

ZCZC MKCRVFUDT DEF
TTAA00 KKRF DDHHMM
RVFUDT

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 0743Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPPER DAKOTA TRIBS

**** UPDATE ****

: ==> This forecast includes obsd precip & 24 hours of QPF <==

RIVER/STATION	FS	TDY	F O R E C A S T
LITTLE MUDDY CREEK			
WILLISTON ND 10NE	10.0	9.6	CREST NEAR 9.8 FT 06/23 AM

:
:
:
:
:
:WILLISTON ND 10NE - LITTLE MUDDY CREEK HSA - BIS
:FLOOD STAGE 10.0 FCST ISSUANCE STAGE 8.0

:LATEST STAGE 9.6 FT AT 0715Z ON 0623

.AR : CREST : LMCN8 20110623 Z DC201106230743/DH12/HGIFFX 9.8

.ER LMCN8 20110623 Z DC201106230743/DH12/HGIFFX/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:/ 9.8/ 9.6/ 9.1/ 8.6

.E2 :0624:/ 8.2/ 7.7/ 7.4/ 7.0

.E3 :0625:/ 6.8/ 6.6/ 6.3/ 6.1

.E4 :0626:/ 6.0/ 6.0/ 5.9/ 5.8

.E5 :0627:/ 5.7/ 5.6/ 5.6/ 5.5

:*****

:COMMENT

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:wao

:...END of MESSAGE...

From: Idm@ls1-krf.krf.noaa.gov
Sent: Thursday, June 23, 2011 1:25 AM
To: Farhat, Jody S NWD02
Subject: Upper Missouri Forecast

ZCZC MKCRVFUMO DEF
TTAA00 KKRF DDHMM
RVFUMO

RIVER FORECAST

NWS MISSOURI BASIN RIVER FORECAST CENTER PLEASANT HILL MO 0622Z THU JUN 23 2011

:
: THIS PRODUCT HAS PRELIMINARY DATA THAT MAY BE SUBJECT TO REVISION.
: REFER TO YOUR LOCAL WFO FOR THE LATEST OFFICIAL RIVER FORECAST.

: FORECAST GROUP IS UPPER MISSOURI

: ==> This forecast includes obsd precip & 24 hours of QPF <==

: ==> This forecast includes projected snowmelt due to <==
: ==> forecasted daily max/min temperatures for the next 14 days <==

: Please note ... Crest forecasts provided are based on 14 days of
: forecast temperatures and should not be assumed to be the absolute
: crests for the snowmelt season.

; ***** UPDATE TO ADJUST FOR RAPID RISE OVER FIS *****

RIVER/STATION	FS	TDY	F O R E C A S T
GALLATIN RIVER			
GALLATIN GTWY MT 8SW	6.0	5.3	CREST NEAR 6.6 FT 06/24 PM

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:
:
:GALLATIN GTWY MT 8SW - GALLATIN RIVER HSA - TFX
:FLOOD STAGE 6.0 FCST ISSUANCE STAGE 5.0
:

:LATEST STAGE 5.3 FT AT 0600Z ON 0623

.AR : CREST : GLGM8 20110625 Z DC201106230622/DH00/HGIFFX 6.6

: RISE ABOVE FLOOD STAGE ON 06/24/2011 AROUND 15Z

: FALL BELOW FLOOD STAGE ON 06/26/2011 AROUND 0Z

.ER GLGM8 20110623 Z DC201106230622/DH12/HGIFFX/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:/ 5.3/ 5.4/ 5.4/ 5.6

.E2 :0624:/ 5.8/ 6.3/ 6.6/ 6.5

.E3 :0625:/ 6.4/ 6.2/ 6.0/ 5.8

.E4 :0626:/ 5.6/ 5.5/ 5.4/ 5.3

.E5 :0627:/ 5.2/ 5.1/ 5.1/ 5.0

.ER GLGM8 20110623 Z DC201106230622/DH12/QRIFFX/DIH6

:QPF FCST 12Z 18Z 0Z 6Z

.E1 :0623:/	5.91/	6.01/	6.09/	6.46
.E2 :0624:/	6.83/	8.13/	8.75/	8.70
.E3 :0625:/	8.32/	7.84/	7.35/	6.90
.E4 :0626:/	6.52/	6.22/	5.95/	5.72
.E5 :0627:/	5.55/	5.41/	5.28/	5.16

:COMMENT

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:jmb

:...END of MESSAGE...